

IATME Bulletin No. 12f

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

ASSOCIATION OF TERRESTRIAL MAGNETISM AND ELECTRICITY

**GEOMAGNETIC INDICES
K and C, 1951**

By

J. BARTELS and J. VELDKAMP

Part of the cost of printing this publication was
borne by a Grant-in-Aid from U.N.E.S.C.O.

Washington
1952

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PREFACE

Après son Assemblée de Washington en 1939, l'Association Internationale de Magnétisme et Electricité Terrestres demanda aux Observatoires magnétiques de fournir, à l'essai, des caractères magnétiques trihoraires K du type mis au point à Potsdam par le Dr. Bartels, en sus des caractères C (0, 1, 2) ayant servi à établir le Caractère magnétique international Ci des jours depuis le 1er janvier 1890. Ont été successivement publiés les Bulletins suivants de l'Association:

- No. 12, 1948 C et K, 1940 à 1946
- No. 12a, 1948 C et K, 1947
- No. 12b, 1949 C et K, 1948
- No. 12c, 1950 C et K, 1949
- No. 12d, 1950 K, Août 1932 à Août 1933 (Année Polaire)
- No. 12e, 1951 C et K, 1950
- Le présent fascicule
- No. 12f, 1952 C et K, 1951

continue cette série parfaitement homogène, oeuvre de notre Comité pour la caractérisation des perturbations magnétiques (Committee on Characterization of Magnetic Disturbances, C.C.M.D.). Cette oeuvre n'a pu être réalisée aussi rapidement que par le travail acharné du président du Comité, le Prof. Bartels, de son secrétaire la Dr. J. Veldkamp, et de Mr. H. F. Johnston; celui-ci a pu mener à bien la lourde tâche de l'édition grâce aux fonds alloués par l'Association, aux subventions de l'U.N.E.S.C.O., et à divers concours privés.

Les travaux personnels du Professeur Bartels ont tendu dès l'origine à établir, à partir des indices K fournis par les divers observatoires, un caractère trihoraire représentant l'activité magnétique générale à la surface de la Terre, du moins celle dont on peut attribuer l'origine à l'émission de particules ionisées par le Soleil.

Après divers tâtonnements il est parvenu en 1949 (Bulletin No. 12b) à une solution déjà satisfaisante. Partant des indices K fournis par 11 observatoires compris entre des latitudes géomagnétiques 47° et 63° , il les rend comparables entre eux par transformation en de nouveaux indices Ks (standardized) et il utilise comme caractère trihoraire la moyenne Kp (planetary) de ces indices Ks.

Tandis que l'Association, dans son Assemblée de Bruxelles en 1951, adoptait définitivement les indices Kp pour mesurer l'activité locale, elle se contentait d'adopter le principe des caractères Kp, ce qui réserve d'une part la possibilité d'augmenter le nombre ou d'améliorer la répartition géographique des observatoires participants, d'autre part celle de faire porter sur un plus grand nombre d'années les comparaisons qui permettent de passer des K aux Ks.

La coexistence de caractères Ci quotidiens, déduits des indices C et de caractères Kp trihoraires, déduits des indices K, pose évidemment la question de l'unification des caractères magnétiques mondiaux. Une solution présentée à notre Assemblée de Bruxelles par le Professeur Bartels au nom de C.C.M.D. consistait à déduire des caractères K trihoraires un caractère quotidien Cp ajusté de façon à prendre la suite des caractères Ci. Mais il a paru théoriquement préférable de créer un nouveau caractère quotidien sans se préoccuper des caractères Ci, quitte à recalculer pour ce nouveau caractère les valeurs correspondant aux années anciennes à partir des caractères Ci correspondants. A

titre d'essai, une certaine "amplitude de perturbation" Ap déduite des indices Kp a été choisie comme nouveau caractère quotidien; elle est donnée pour la première fois dans le présent fascicule. Notre prochaine Assemblée devra voir si elle l'adopte définitivement, si elle la rejette ou si elle la modifie, en même temps qu'elle réexaminera les possibilités d'amélioration du caractère Kp.

De son côté le Dr. Veldkamp a organisé une surveillance synoptique des perturbations magnétiques les plus caractéristiques, déjà féconde et dont on peut attendre de très importants résultats: tout d'abord la clarification des termes grâce à la délimitation des phénomènes qu'ils représentent: Il se forme progressivement une entente internationale sur ce qu'on doit appeler début brusque de tempête magnétique (s.s.c.); début brusque de tempête polaire, dont on sait maintenant qu'il est toujours accompagné de pulsations (p.s.c.); implusion brusque (s.i.); crochet magnétique (s.f.e.). Des divergences subsistent, conduisant à une disproportion entre le nombre des phénomènes signalés par les divers observatoires; mais ces divergences se réduisent à mesure qu'interviennent des données supplémentaires relatives à l'ionosphère et aux émissions solaires optiques ou radioélectriques. Elles permettent en même temps de dégager de nouvelles espèces morphologiques telles peut-être que les effets de tourbillons ionosphériques.

Ce travail, par son intérêt soutenu, est un puissant stimulant pour les services magnétiques des Observatoires participants. Mais inversement l'Association contracte envers eux une dette de reconnaissance. Sans le soin qu'ils apportent à la lecture de leurs enregistrements tout travail international serait vain. De nouveaux observatoires sont venus se joindre à la liste des collaborateurs: Coimbra en 1951, Istanbul-Kandilli ainsi que les stations australiennes des Iles Heard et Macquarie en 1952. Je suis heureux de leur exprimer les très vifs remerciements de l'Association.

J. Coulomb
Président de l'Association Internationale
de Magnétisme et Electricité Terrestres

GEOMAGNETIC DATA, 1951

Introduction

List of observatories--This list contains data of all contributing magnetic observatories. The stations have been arranged according to geographic latitude. The first page gives the name of the observatory and its two-letter symbol, the name of the collaborator, and the geographic and geomagnetic coordinates. The second page gives the scale values of the instruments, used for scaling K or (and) C, the lower limit for K = 9, and the range of disturbances on a day with character figure C = 1. The third page gives information on the method used by a number of observatories for checking the solar-flare effects found in the magnetograms. The column "Ionospheric Station or Radio Service" indicates the ionospheric or solar observatory or the radio service whose reports on Dellinger effects, eruptions on the sun, and black-outs in the radio communication enable the magnetic observatory to distinguish between a solar-flare effect and a common bay-disturbance.

The station Do started a new observatory in the month of March 1951.¹⁾ The new scale values are indicated in the List of Observatories, page 7. A new magnetic station is Coimbra (Ci), which came into action with absolute instruments in the beginning of 1951, and with recording variometers since October 1951. The observatory Pi was struck by a disaster: November 22, 1951, at 02h 35m, a tornado completely destroyed the buildings for absolute and variation instruments. Since that date no figures for Pi are available. The observatories SM and Te started with K-figures on January 1, 1951.

Figure A shows graphically which observatories have furnished K-figures for 1937-1951. The symbols for the observatories, which are not found in the list for 1951, are explained in Bulletin 12.

Table 1 gives the eight K-indices for each magnetic observatory for every day of 1951. The observatories are indicated by the symbols given in the list of observatories, and are arranged in the order of geomagnetic latitude. When a value K is missing, a hyphen is used. Interpolated values are indicated by dots above the figures. The actual scaled K-indices are given, without any reduction for a presumed solar-flare effect.

Table 1a gives K-figures for 1951 from the observatory SM, which arrived after completion of Table 1, as well as K- and C-figures from Ci for the months of October to December.

Table 2 shows the mean Kw, the mean values of the K-indices for each three-hour interval. It also gives the sum of the eight Kw-figures for each day. The mean values are based on the K-indices of Table 1.

Table 3 gives the C-figures from 44 stations for every day of 1951, arranged in the order of geomagnetic latitude. A hyphen is used when a value is missing. The table also gives the sum of C-figures for the whole month for each observatory in the column at the right. At the bottom of the table the sums for every day are shown, together with the magnetically selected days of each month. The selected days are summarized in Table 7.

¹⁾J. Geophys. Res., No. 4, Dec. 1951, page 616.

Table 4 shows the international magnetic character figure C, 1951, obtained by averaging the values of Table 3 for every day.

Table 5 gives the monthly mean values of Kw for each of the eight three-hour intervals, the monthly mean Kw, and the monthly mean C. It also gives the annual means for 1951.

Table 6 gives the annual means for the years 1940-1951.

Table 7 gives a summary of the selected quiet and disturbed days for 1951. The selection was made on the basis of four criteria: (a) C; (b) the sum of the eight values of Kw; (c) the sum of the squares of the eight Kw; (d) the greatest of the eight values of Kw. The days of each month were assigned relative "order numbers" according to the four criteria, the four order numbers were averaged, and the days with highest and lowest mean order numbers were selected for the five disturbed and the ten quiet days. The five quiet days were selected from the ten under avoidance of a 14-day period in order to reduce a lunar influence on the mean daily variation on the five quiet days.

The Brussels Conference of the IATME in August 1951 decided to drop Kw in favor of Kp, beginning with January 1, 1952. A comparison between selections of international days using either Kw or Kp proved that the substitution of Kw by Kp did not result in a change of the selected days. Therefore, from January 1952 the selection will be made by means of Kp.

Table 8 is a list of sudden commencements followed by a magnetic storm or a period of storminess (s.s.c.). The most important cases are marked by an asterisk. The times of the column at the left are mean values with special regard to data of quick-run records. Most of the 38 observatories which checked the sudden commencements agreed with the term s.s.c., but in some cases one or more observatories preferred the qualification p.s.c. of s.i. The table contains only data which were affirmed by at least 10 observatories. Observatories, which found a slight disturbance, without being clear about its character, are indicated by the word "doubtful". The checking observatories were: Tr, Co, So, Le, Do, St, Es, Lo, RS, Wn, Wi, Ab, Ni, CF, Ch, Fu, SM, Ci, Eb, Tl, SF, Tu, Ks, SJ, Te, Ka, Ta, Ho, Hu, Va, El, Ap, Pi, Tn, Hr, Wa, To, Am.

Table 9 is a list of polar or pulsational sudden commencements (p.s.c.). This means a type of sudden displacement in the magnetogram, which is followed by a pulsation and (or) a bay-disturbance. Only cases affirmed by more than 10 observatories are collected. This list cannot be considered as complete, as it may be that a p.s.c. has been selected by the observatories out of a great many p.s.c.-like disturbances, all occurring on the same day. This remark holds also for Table 10.

Table 10 gives a summary of sudden geomagnetic changes or impulses (s.i.), which could not be classified as s.s.c. or p.s.c. Cases, observed by only a few observatories, have been omitted.

Table 11 gives a summary of solar-flare effects, reported by the observatories. The times tabulated in the column at the left indicate the beginning of the solar-flare effect. Very important cases are marked by an asterisk. A check of the solar-flare effect was made by 33 observatories: Co, Le, Do, St, Es, RS, Wn, Wi, Ab, Ni, CF, Ch, Fu, SM, Ci, Eb, Tl, Tu, Ks, SJ, Te, Ka, Ta, Ho, Hu, Va, El, Ap, Pi, Hr, Wa, To, Am. Stations lying on the daylight hemisphere, which reported a

clear effect, have been written behind the indicated times. Underlined are observatories lying near the subsolar point. Stations lying in the twilight zone of the dark hemisphere are indicated by dotted brackets. Stations in full dark, which reported a clear disturbance, have been given in parentheses. As is to be expected, such cases are rather infrequent.

Furthermore, the stations on the daylight hemisphere have been mentioned which were in doubt about the presumed solar-flare effect, as well as the stations in daylight which could not find this type of disturbance at the indicated time.

Stations on the nightside of the earth, which gave a negative or doubtful answer, have been omitted.

In cases where one or more stations reported a simultaneous disturbance from an ionospheric or solar observatory or from a radio service, which gave support to the solar-flare effect, the indicated time has been underlined.

It must be emphasized that it is not quite certain that all cases of this table represent real solar-flare effects. This holds especially for the small effects which are difficult to distinguish from other disturbances.

Table 11a gives doubtful solar-flare effects. As doubtful have been considered those cases where the stations near the subsolar point reported no effect, or where one or two stations on the nightside of the earth mentioned a bay-disturbance. It must therefore be considered improbable that the disturbances summarized in this table are real s.f.e.'s. Meanwhile, it is not impossible that a part of the cases of this table are real solar-flare effects. The underlining of times and stations, and the use of brackets, has the same meaning as in Table 11.

Table 11b summarizes times of presumed solar-flare effects, which have proved to be most probably no real solar-flare effects, as several stations in full dark reported a sudden commencement or a bay-disturbance at the indicated time, whereas stations in full daylight found only a doubtful effect, or a disturbance which did not agree with an increase of the normal daily variation.

Table 12 gives a number of ionospheric disturbances which were not accompanied by a clear geomagnetic effect.

Table 13 is a list of magnetic storms and other outstanding occurrences recommended for reproduction.

Table 14 gives drawings of three important solar-flare effects, viz., 1949 Feb. 01d 12h 19m, 1949 Sep. 17d 17h 16m, and 1950 Feb. 17d 01h 20m, as recorded by a number of observatories. The drawings have been reduced to the same scale.

Table 15 is a report on four selected solar-flare effects recorded in 1950, viz., Feb. 13d 19h 23m, Feb. 17d 01h 38m, Apr. 14d 12h 53m, Apr. 14d 13h 40m.

The following observatories sent data concerning these solar-flare effects: Tr, Ai (Abisko), Co, Le, Lo, Si, RS, Es, Wn, Wi, Ni, Ab, Na, Eb, Tl, Ch, SM, Ka, Ks, Tu, He, Ho, Te, SJ, El, Hu, Ap, Va, Wa, Hr, To, Am.

Four maps show the overhead currents necessary to produce the s.f.e.'s and the currents of the normal daily variation. In order to avoid overcrowding of the vectors in the northwestern part of Europe, mean values are taken for the ob-

servatories Le, Lo, RS, Es, Wn, Wi, Ni, Ab, and Na, and the mean vectors are drawn at a point indicated by the symbol E. The same is done for the observatories Tr and Ai. Here the mean values are drawn at the point NE. The mean values for Eb and Tl are indicated at a point SE.

For the normal daily variation the variation on the day of the s.f.e. was used, taking the night value (between 22h and 02h local time) as base line.

Tables 16-21. The Brussels Meeting of the IATME in August 1951 discussed several matters of interest to the Committee on Characterization of Magnetic Disturbances (CCMD). The Brussels Transactions, to appear as IATME Bulletin No. 14, will contain the Report of the CCMD, and "Hints for scaling K-indices." The IATME adopted finally "as measures for the intensity of magnetic disturbances in three-hour intervals, the K-index to describe the local conditions, and the principle of the planetary index Kp to describe the level of magnetic activity for the earth as a whole."

With respect to daily indices, a proposal to replace the international character figure Ci by a standardized figure Cp was dropped. Instead, the CCMD was instructed "to introduce, for a trial period, a system of describing the level of magnetic activity by equivalent ranges, in particular by the planetary range Ap for the earth as a whole, and to derive a long series for Ap on the basis of older data."

Tables 18 and 19, drawn up according to these instructions, give daily amplitudes Ap, and monthly averages, for 1932/33 and for 1940-1951. The table heading repeats the definition of Ap.

Tables 20 and 21 give frequencies of Kp-indices. In the parts (a) to (c), the usual scale of 28 grades 0o to 9o was contracted into 10 steps, 0 to 9, by disregarding the affixes -, o, and +. Part (d) shows the distribution of the 28 grades. These tables will be useful for a future discussion on the systematic time-variations of magnetic activity. They will also serve for a critical examination of the degree of perfection aimed at by the standardization processes used in the calculation of Kp, and of the possibilities for improvement. As expected, there is a deficiency of 0o and 0+ indices around the June solstice, and around Greenwich noon; but even this imperfection, reflecting the well-known rarity of magnetic observatories near the southern auroral zone, could be rectified by reducing, say, in June and July, one-third of all indices 0+ to 0o, and the same amount of 1- to 0+. So, even in this most obvious case, the Kp-scale does not, by more than a fraction of one step, differ systematically between northern summer and northern winter, nor between Greenwich noon or midnight. The well-known semi-annual wave - higher activity near the times of the equinoxes - is well exhibited in Tables 20 and 21, in the frequencies of the grades 5 to 7. The highest grades, 8 and 9, are more erratic. Statisticians should be warned to apply ordinary chi-square tests to these tables because the "number of effectively independent events" is often, due to auto-correlation and quasi-persistent periodicities, much smaller than the total number of observations.

Committee on Characterization of Magnetic Disturbances

J. Bartels, Chairman
Geophysikalisches Institut
Göttingen, Germany

J. Veldkamp
Kon. Nederlandsch Met. Instituut
De Bilt, Holland

NOTE TO THE USERS OF THIS BULLETIN

The main content of this Bulletin is the quantitative description of the time changes of the intensity of geomagnetic activity in the year 1951, based on data supplied by about 40 observatories. The tables continue a long series of more than a million figures, supplied by the observatories, and collected by the Committee on Characterization of Magnetic Disturbances (CCMD) of the International Association of Terrestrial Magnetism and Electricity (IATME).

Regional conditions are described by the daily character figures C and the three-hour-range index K. These are combined into world-wide averages, the international character figure, Ci, and the geomagnetic planetary three-hour-range indices, Kp. After a trial period of several years, the IATME has adopted the K-index, and the principle of the Kp-index, as measures of geomagnetic activity. A daily measure based on Kp, the average amplitude Ap, has tentatively been introduced.

For the availability of earlier Bulletins (listed on the back cover), inquiries should be directed to the Secretary of the IATME, Dr. V. LAURSEN, Dansk Meteorologisk Institut, Charlottenlund, Denmark.

The meaning of C, Ci, K, and Kp, as well as of the other phenomena mentioned in this Bulletin, is explained in textbooks, e.g., in: LANDOLT-BÖRNSTEIN, Zahlenwerte und Funktionen, Band 3, Astronomie und Geophysik, pp. 731-744 (Berlin 1952: Springer-Verlag), and in Terr. Mag. 44, 411-433 (1939) and 46, 301-303 (1941). The exact definition of Kp is given in IATME Bulletin No. 12b.

Tables for Kp for previous years may be found: for the Polar Year, August 1932 to August 1933, in Bulletin No. 12d, pp. 48-50; for 1940-1944, in Bull. No. 12c, pp. 104-113; for 1945-1948, in Bull. No. 12b, pp. 113-120; for 1949, in Bull. No. 12c, pp. 102-103; for 1950, in Bull. No. 12e, pp. 104-105.

A collection of diagrams for Kp, 1932/33 and 1940 to 1950, together with diagrams for daily characters 1884-1950, is given in: Abhandlungen Akad. Wiss. Göttingen, Math.-Phys. Kl., Sonderheft 1951. Current tables of the K-index are being published in many journals, e.g., for the British Observatories, in the JOURNAL OF TERRESTRIAL AND ATMOSPHERIC PHYSICS. Quarterly tables of Kp appear in the JOURNAL OF GEOPHYSICAL RESEARCH. Also in the September 1949 issue of JOURNAL OF GEOPHYSICAL RESEARCH, there is given a short description of Kp on pages 296 and 297. Final values of Kp for a calendar month are usually available, as tables and in graphical representation, before the end of the next month, and they are distributed to about 140 institutions in many countries. They are also reproduced in the Central Radio Propagation Laboratory (National Bureau of Standards, Washington) F-series: Ionospheric Data, and in the quarterly Sonnen-Zirkular, Fraunhofer-Institut, Freiburg, Germany.

The authors of this Bulletin, as well as all other members of the Committee, will be glad to supply any information concerning these data.

Beginning with Bulletin No. 12c (1949), tables are given concerning sudden commencements of magnetic storms, and other sudden changes found in the magnetograms, as well as solar-flare effects (see Terr. Mag. 41, 404-406 (1936); 42, 109-122 (1937), or Chapman-Bartels, Geomagnetism, p. 341ff., Oxford Univ. Press (1940).

LIST OF OBSERVATORIES 1951
Arranged according to geographic latitude

	Observatory	Collaborator	Geographic		Geomagnetic	
			Lat.	Long.	Lat.	Long.
Tr	Tromsø	E. Tønnsberg	+69° 40'	18° 57'	+67.1°	116.7°
So	Sodankylä	E. Kataja	+67 22	26 39	+63.8	120.0
Co	College	M. L. Clevén	+64 52	212 10	+64.5	255.4
Do	Dombas	K. F. Wasserfall	+62 04	9 07	+62.3	100.0
Le	Lerwick	R. A. Watson	+60 08	358 49	+62.5	88.6
Lo	Lovö	F. Eleman	+59 21	17 50	+58.1	105.8
Si	Sitka	J. B. Campbell	+57 04	224 40	+60.0	275.4
RS	Rude Skov	J. Egedal	+55 51	12 27	+55.8	98.5
Es	Eskdalemuir	R. A. Watson	+55 19	356 48	+58.5	82.9
Me	Meanook	R. G. Madill	+54 37	246 40	+61.8	301.0
Wn	Wingst	O. Meyer	+53 45	9 04	+54.5	94.0
Wi	Witteveen	D. van Sabben	+52 49	6 40	+54.2	91.0
Sw	Swider	Z. Kalinowska	+52 07	21 15	+50.6	104.6
Ni	Niemegk	G. Fanslau	+52 04	12 40	+52.2	96.5
Ab	Abinger	H. Spencer Jones	+51 11	359 37	+54.0	83.3
Ma	Manhay	L. Koenigsfeld	+50 18	5 41	+52.0	88.8
Fu	Fürstenfeldbruck	Fr. Burmeister	+48 10	11 17	+48.9	92.4
CF	Chambon-la-Forêt	G. Gibault	+48 01	2 16	+50.4	83.9
Na	Nantes	O. Noblanc	+47 15	358 27	+50.5	80.1
Ag	Agincoourt	R. G. Madill	+43 47	280 44	+55.0	347.0
Eb	Ebro	A. Román S. J.	+40 49	0 30	+43.9	79.7
Ci	Coimbra	J. C. Morais	+40 13	351 35	+45.0	70.0
Tl	Toledo	J. Sancho	+39 53	355 57	+43.6	75.7
Ch	Cheltenham	P. G. Ledig	+38 44	283 10	+50.1	350.5
SM	San Miguel	H. Am. Ferreira	+37 46	334 21	+45.6	50.9
SF	San Fernando	W. Benítez	+36 28	353 48	+41.0	71.3
Ka	Kakioka	S. Imamiti	+36 14	140 11	+26.0	206.0
Ks	Ksara	J. Delpeut S. J.	+33 50	35 54	+30.4	112.0
Tu	Tucson	J. H. Nelson	+32 15	249 10	+40.4	312.2
ZS	Zö-Sö		+31 06	121 11	+19.8	189.2
He	Helwan	M. R. Madwar	+29 52	31 20	+27.2	106.4
Ta	Tamanrasset	C. Billaud	+22 48	5 31	+25.4	80.6
Ho	Honolulu	L. R. Burgess	+21 18	201 54	+21.1	266.5
Te	Teoloyucan	R. O. Sandoval	+19 45	260 49	+29.6	327.1
Al	Alibag	S. L. Malurkar	+18 38	72 52	+ 9.5	143.6
SJ	San Juan	R. M. Wilson	+18 23	293 53	+29.9	3.2
El	Elisabethville	G. Heinrichs	-11 39	27 28	-12.7	94.1
Hu	Huancayo	A. A. Giesecke Jr.	-12 03	284 40	- 0.6	353.8
Ap	Apia	A. L. Burrows	-13 48	188 14	-16.0	260.2
Tn	Tananarive	R. P. J. Coze	-18 55	47 33	-23.7	112.5
Va	Vassouras	L. I. Gama	-22 54	316 21	-11.9	23.9
Wa	Watheroo	L. S. Prior	-30 19	115 53	-41.8	185.6
Pi	Pilar	O. Lützow-Holm	-31 40	296 07	-20.2	4.0
Hr	Hermanus	A. M. van Wijk	-34 26	19 14	-33.7	81.7
To	Toolangi	J. M. Rayner	-37 32	145 28	-46.7	220.8
Am	Amberley	H. F. Baird	-43 09	172 43	-47.7	252.5

LIST OF OBSERVATORIES 1951 - continued

7

	Scale Values			Lower Limit K = 9 γ'	Ranges for C = 1
	D $\gamma'/\text{mm}, ''/\text{mm}$	H γ'/mm	Z γ'/mm		
Tr	4.7	5.1	6.8	2000	400-1200 γ'
So	3.7	8.2	11.0	1500	45-200 γ'
Co	3.6	6.9	9.2	2500	No fixed range
Do	9.6	9.0	7.6	750	
Le	4.0	3.6	5.9	1000	
Lo	4.2	4.5	5.0	1200	
Si	4.5	7.0	8.0	1000	No fixed range
RS	4.8	10.0	10.0	600	D: 4'-12'; H: 14-42 γ' ; Z: 9-27 γ'
Es	4.3	4.0	5.6	750	
Me	3.6	7.8	10.8	1500	30-375 γ'
Wn	4.3	6.0	2.8	500	Sum K: 20-30
Wi	9.7	9.4	5.5	500	D: 4'-12'; H: 15-45 γ' ; Z: 7-21 γ'
Sw	3.6	3.6	4.5	500	
Ni	2.1	2.1	2.6	500	
Ab	5.0	4.4	4.4	500	
Ma	5.2	2	3.8	500	D: 4'-12'; H: 15-45 γ' ; Z: 7-21 γ'
Fu	2.6	2.7	2.3	500	No fixed range
CF	5.8	6.2	3.1	500	No fixed range
Na	9.5	7.2	6.5	500	D: 4'-12'
Ag	4.0	5.1	5.9	600	12-150 γ'
Eb	6.9	6.6	10.0	350	14-55 γ'
Gi	7.8	3.9	4.8	350	Sum K: 20-30
Tl	7.9	5.3	4.3	350	D: 2'-8'; H: 10-60 γ' ; Z: 10-50 γ'
Ch	5.4	2.7	4.1	500	Sum K: 25-44
SM	9.1	6.8	3.4	350	No fixed range
SF	0.7	3.1	---	350	10-30 γ'
Ka	6.6	2.8	4.5	300	No fixed range
Ks	1.1	7	4.5	300	15-45 γ'
Tu	3.8	3.0	---	350	No fixed range
ZS	0.3	2	1.4	300	No fixed range
He	6	6	1	---	10-30 γ'
Ta	1.0	5.4	3.0	300	H: 42-130 γ'
Ho	8.4	2.8	3.3	300	Sum K: 22-38
Te	1.0	4.6	3.8	350	D: 2'-4'; H and Z: 10-20 γ'
AL	11.3	4.4	2.8	300	No fixed range
SJ	8.1	2.6	4.7	300	Sum K: 14 or 18 - 30 or 35
EL	6.2	6.2	7.8	---	H: 20-100 γ'
Hu	1.0	1.9	3.4	600	Sum K: 25-41
Ap	10.1	2.3	1.7	300	Sum K: 22-31
Tn	1.5	6	4	300	No fixed range
Va	1.1	2.5	3	---	No fixed range
Wa	7.1	2.4	3.9	350	20-35 γ'
Pi	6.8	3.4	1.7	300	
Hr	2.1	2.3	4.0	300	No fixed range
To	7.5	4.9	4.4	500	Sum K: 18-34
Am	7.3	4.3	4.4	500	No fixed range

LIST OF OBSERVATORIES 1951 - continued

Instruments	Ionospheric Station or Radio Service
Tr Normal sens.	Cable and Wireless Ltd; Sol.Obs: Greenwich, Edinburgh
So Normal sens.	
Co Normal sens.	
Do Normal sens.	
Le Normal sens.	
Lo Normal, low sens.+quick run	Cable and Wireless Ltd; Sol.Obs: Greenwich, Edinburgh
Si Normal and low sens.	
RS Normal, low sens.+quick run	
Es Normal sens.	
Me Normal and low sens.	
Wn Normal sens, dH/dt quick run	Inst. für Ion.-forschung, Lindau; Sol.Obs: Fraunhofer Inst., Freiburg Nederhorst Den Berg Radio (Nera)
Wi Normal sens.+quick run	
Sw Normal sens.	
Ni Normal sens.	
Ab Normal sens.+quick run	
Ma High sens.	Zentralobs. Potsdam; Sol.Obs: Astrophysikal.Obs., Potsdam Cable and Wireless Ltd; Sol.Obs: Royal Obs. Greenwich
Fu Normal sens.+ high sens.	
CF Normal sens.+ quick run	
Na Normal sens.	
Ag Normal and low sens.	
Eb Normal sens.	Inst. für Ion.-forschung, Lindau Lab.Nat. de Radioélectr. Bagneux; Sol Obs:Obs.d'Astrophysique, Meudon
Ci Normal sens.	
Tl Normal sens.	
Ch Normal and low sens.	
SM Normal sens.+quick run	
SF Normal sens.	Confirmation by earth-currents
Ka Normal and high sens.+quick run	
Ks Normal sens.	
Tu Normal sens.	
ZS Normal sens.	
He Normal sens.	Tokyo Wireless Adjusting Station
Ta Normal sens.+ dH/dt quick run	
Ho Normal sens.	
Te Normal sens.	
Al Normal sens.+quick run	
SJ Normal sens.	Chinese Radio; ZS spectroheliometer; Sol.Obs: ZS Astronom.Obs.
El Normal sens.	
Hu Normal sens.+quick run	
Ap Normal sens.	
Tn Normal sens.	
Va Normal sens.	All India Radio, New Delhi; Radio Ceylon Colombo; Sol.Obs: Sol.Phys.Obs., Kodaikanal
Wa Normal sens.	
Pi Normal sens.	
Hr Normal sens.+quick run	
To Normal sens.	
Am Normal sens.	Inst. Geofisico de Huancayo; Sol.Obs: " " " Apia Radio; Christchurch Geoph.Obs.; Sol.Obs: Carter Obs., Wellington
	Watheroo Magn.Obs.
	Telecomm. Research Lab, CSIR, Johannesburg
	Lincoln Ion.Stat.; New Zealand Broadc. Service, Wellington; Sol.Obs: Carter Obs. Wellington

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Jan.	1	2	3	4	5	6
Tr	4211	3334	4443	4465	4531	2234
Co	1122	4322	2332	4322	2413	4122
So	3211	3444	4333	4464	3411	2133
Le	3121	2323	3332	3243	3431	2133
Do	3211	2303	3333	3353	3411	2133
Me	1111	2222	2332	3332	2322	2221
Si	1221	3321	2332	3221	2322	2222
Es	3211	2322	2332	3343	3422	2133
Lo	3222	2423	2333	3353	3411	2132
RS	3221	3323	2322	3354	3411	2133
Ag	2222	3232	2442	3233	2522	2223
Wn	4222	2433	3433	4454	4522	2233
Wi	3232	3323	3332	4364	3422	2233
Ab	3233	3333	3333	4353	3423	3233
Ni	4222	2323	3333	4354	3422	2233
Ma	3222	2323	2332	4353	3422	2132
Sw	3222	1323	2323	3353	2412	1132
Na	3222	3332	3332	3354	3422	3233
CF	3322	2333	3333	3344	3423	3233
Ch	2222	2232	3442	3233	3522	2223
Fu	3232	3323	2332	4353	3423	3132
Eb	3211	3333	3332	3343	3412	1132
TL	3222	2332	2433	3343	3422	1132
SF	4234	3333	2423	5354	2424	3332
Tu	1321	2323	3342	3334	3422	2232
Ks	3222	1322	3233	5464	3421	2133
SJ	2221	2222	2222	2132	3311	1112
Te	-----	-----	-----	-234	3311	2234
Ka	2221	2322	2343	3422	1422	3122
Ho	0210	1112	1332	3232	1411	1111
AL	2321	3222	2233	4343	1412	2122
Hu	2211	3532	2222	5542	2201	2322
Ap	3421	2223	3442	2333	4522	2223
Pi	3313	0303	2332	3423	3302	0302
Tn	3344	4433	2344	4354	3343	3233
Hr	2333	3222	2434	4343	1423	2122
Wa	3321	3323	3243	4442	3432	3011
To	4332	3333	3343	4432	2522	3233
Am	2321	2333	4442	4333	4421	2224
Jan.	7	8	9	10	11	12
Tr	0100	0013	3012	3300	1110	1012
Co	0032	0010	0034	4200	0024	1000
So	0110	0112	2012	3310	1111	1111
Le	0111	1102	2011	2211	1111	1001
Do	0000	0001	2002	2221	0100	1100
Me	0133	0011	0034	3110	1233	1011
Si	0132	0010	0033	3210	0233	2100
Es	0120	1101	2022	3210	1112	2000
Lo	0110	1101	2022	3310	1111	1100
RS	1000	1111	2022	3221	1111	1100
Ag	0223	2221	2033	4222	1232	2211
Wn	1211	2112	2122	2321	2212	2201
Wi	1111	1112	2132	3321	2223	3200
Ab	0111	2212	2022	3321	1222	2111
Ni	1121	2112	1122	2321	2212	3111
Ma	1110	0112	2122	2322	2221	2200
Sw	0112	2011	2122	2221	1111	2100
Na	1210	1112	2122	3321	2221	2100
CF	1101	0002	2023	2320	2222	2100
Ch	0122	0121	2133	2121	2332	1100
Fu	1122	2211	2122	3310	1222	2101
Eb	0110	0111	2012	3322	1221	2100
TL	0110	0011	2012	3221	1211	1100
SF	0134	2322	3112	4321	212-	3201
Tu	0132	0011	1133	2121	2233	1101
Ks	0011	1011	2022	3331	1233	3210
SJ	0010	0121	1121	2321	1221	1201
Te	2120	0323	2123	2132	2323	2102
Ka	0101	1221	1122	3321	1222	2200
Ho	0020	0010	0122	1022	1122	1101
AL	1221	2121	1232	3222	1222	2111
Hu	0011	1331	1122	3231	2222	3342
Ap	2320	0022	3331	2232	3222	2233
Pi	1112	1102	2223	0311	2223	4323
Tn	23--	-----	-354	4432	3344	4322
Hr	0011	2111	1123	4210	0122	1100
Wa	4420	0212	312-	3222	5332	2203
To	3421	1233	3332	3322	3333	2114
Am	2222	0112	3332	2222	1223	1122
Tr	0100	0013	3012	3300	1110	1012
Co	0032	0010	0034	4200	0024	1000
So	0110	0112	2012	3310	1111	1111
Le	0111	1102	2011	2211	1111	1001
Do	0000	0001	2002	2221	0100	1100
Me	0133	0011	0034	3110	1233	1011
Si	0132	0010	0033	3210	0233	2100
Es	0120	1101	2022	3210	1112	2000
Lo	0110	1101	2022	3310	1111	1100
RS	1000	1111	2022	3221	1111	1100
Ag	0223	2221	2033	4222	1232	2211
Wn	1211	2112	2122	2321	2212	2201
Wi	1111	1112	2132	3321	2223	3200
Ab	0111	2212	2022	3321	1222	2111
Ni	1121	2112	1122	2321	2212	3111
Ma	1110	0112	2122	2322	2221	2200
Sw	0112	2011	2122	2221	1111	2100
Na	1210	1112	2122	3321	2221	2100
CF	1101	0002	2023	2320	2222	2100
Ch	0122	0121	2133	2121	2332	1100
Fu	1122	2211	2122	3310	1222	2101
Eb	0110	0111	2012	3322	1221	2100
TL	0110	0011	2012	3221	1211	1100
SF	0134	2322	3112	4321	212-	3201
Tu	0132	0011	1133	2121	2233	1101
Ks	0011	1011	2022	3331	1233	3210
SJ	0010	0121	1121	2321	1221	1201
Te	2120	0323	2123	2132	2323	2102
Ka	0101	1221	1122	3321	1222	2200
Ho	0020	0010	0122	1022	1122	1101
AL	1221	2121	1232	3222	1222	2111
Hu	0011	1331	1122	3231	2222	3342
Ap	2320	0022	3331	2232	3222	2233
Pi	1112	1102	2223	0311	2223	4323
Tn	23--	-----	-354	4432	3344	4322
Hr	0011	2111	1123	4210	0122	1100
Wa	4420	0212	312-	3222	5332	2203
To	3421	1233	3332	3322	3333	2114
Am	2222	0112	3332	2222	1223	1122

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Jan.	13	14	15	16	17	18						
Tr	5543	2154	5332	4465	5432	3256	4223	3467	5331	1133	2111	2225
Co	2345	2143	3235	5323	3333	5333	2135	6544	2323	2210	1102	4301
So	4432	1155	4222	3354	4322	3256	4122	3465	4321	1122	1111	2224
Le	3322	1143	3222	2333	3321	3234	3122	3335	3331	1112	1111	2213
Do	3322	1143	3222	2334	4322	2325	3112	3445	4300	0022	0020	2203
Me	3453	1133	2333	4322	4433	4223	3134	5324	2332	1211	0101	2211
Si	3453	1132	2223	4323	3443	3233	2043	4333	2322	1110	1101	3301
Es	2332	2143	3223	3333	4322	3234	3212	3344	3321	1111	0111	2203
Lo	3332	1143	2222	3334	3322	3235	3123	4445	4332	1112	1111	3203
RS	3332	1143	2223	2334	3322	2334	3123	3445	4322	1112	1111	2303
Ag	4442	3232	4332	3223	5442	3223	2134	3334	3432	1221	0201	2222
Wn	3332	2144	3333	3344	4423	3345	4223	4345	4332	1122	1121	3214
Wi	3432	2244	3333	3344	4422	3245	4233	4455	4332	1122	1121	2214
Ab	2332	2243	3322	3333	4322	3344	4123	4445	4322	1211	1112	3323
Ni	3332	2144	3223	3344	4323	3345	4213	4445	4321	1121	1112	3213
Ma	2332	1243	3222	3233	4422	2244	4223	4444	4321	0112	1101	2213
Sw	3332	1143	2222	3333	3322	2234	3113	3434	4321	1111	0111	3213
Na	3332	2153	3223	3343	4322	3344	3213	4445	4331	1122	1211	2213
CF	3332	2143	3233	3343	4423	2244	3223	4444	4322	1012	1212	2213
Ch	4442	1132	3232	3223	4432	3233	2123	3324	4331	0121	1111	1112
Fu	3322	1143	2223	3333	4322	2234	4133	4444	4323	1111	1232	3203
Eb	2321	1044	3222	3333	4412	2234	3112	2344	3321	0011	1111	2213
TL	3331	2143	3232	3333	4432	3234	4123	4444	4331	0011	1111	2213
ST	3433	2155	2332	4434	2333	3345	4133	4455	-----	-221	1122	3323
Tu	4432	2242	3322	3323	5422	4323	2233	4324	3331	0111	1111	1102
Ke	3342	2134	3222	3324	3333	4355	3113	4454	3332	1021	1022	2113
SJ	3331	1132	3232	2213	4422	2223	2122	3323	3320	1121	1110	1112
Te	3322	2241	2222	3322	4322	2233	2122	3323	2211	2222	0111	1122
Ka	2243	1132	2232	4322	2223	3334	2123	4333	2221	2110	1311	4301
Ho	2232	0132	1132	4122	1122	3212	1112	3213	2121	1111	1101	1102
AL	2232	1142	1122	2232	2122	3234	2122	3342	1321	1121	1321	2112
Hu	2222	2344	2222	4423	3322	4443	1113	3533	2311	1221	1201	2222
Ap	3232	1133	3322	4123	2332	3233	3222	3233	2121	1122	3211	1112
Pi	3323	3352	3222	3342	4422	3244	3203	3324	3321	3013	2212	0202
Tn	3343	3354	3343	4443	3234	4344	4333	4444	3444	3222	2334	3323
Hr	2333	2043	3333	3223	3223	3233	3333	4334	3433	1111	1112	4202
Wa	3242	1132	3443	4333	3433	3333	4233	4333	3222	1111	2221	3302
To	3343	1133	3343	4333	3333	4333	3233	4334	3332	2232	2322	3323
Am	2332	1132	3332	3313	3332	4233	3222	4333	3322	1010	3201	2212
Jan.	19	20	21	22	23	24						
Tr	5321	2155	5311	2213	0002	4666	6554	5566	6343	4466	2322	3234
Co	2135	5123	3101	4210	1102	6744	3356	6555	3235	6433	2124	5122
So	4211	2146	6211	2112	0002	3666	6444	5566	6333	3355	2222	2233
Le	3211	2235	4211	2201	1002	3545	5443	4455	4323	3343	1212	2122
Do	3220	2125	4111	1201	0002	2646	5353	4556	5233	3443	1222	3132
Me	3223	4222	2100	2210	0002	4533	4565	5534	3245	4333	1233	4222
Si	2224	4222	2100	3310	1002	4633	4564	6545	3244	4332	1233	3122
Es	3221	2234	3111	2200	1002	3435	4443	4455	4233	3343	1222	3222
Lo	3221	2235	4111	2201	0012	3545	4343	4556	4233	3443	1222	3232
RS	3221	2234	3111	2201	0002	4445	4343	4566	4233	3443	1222	3132
Ag	4222	3233	4210	2220	1002	4534	6564	4545	5244	3333	1333	3212
Wn	4222	3235	4212	2211	1013	4445	5443	4566	4233	3453	1222	3132
Wi	4222	4345	4212	2211	1013	4445	5454	5566	4334	3454	2332	3232
Ab	3231	3344	4212	2211	1023	4445	4444	5466	4234	3354	1222	3132
Ni	3221	3244	4211	2211	1113	4445	5443	4566	4333	3453	2222	3232
Ma	3222	2235	3201	2211	1002	4445	4433	5566	4223	3344	2222	3222
Sw	3212	2124	3111	1211	0012	3445	4342	4455	4223	3443	1222	2222
Na	3221	3244	4112	2211	1112	4445	4443	4566	4223	3343	1322	3232
CF	3222	2234	3112	2211	0013	3445	4443	4466	4223	3343	1323	3232
Ch	4211	2234	3211	1111	0013	4434	6443	4555	5243	3333	1332	3222
Fu	3231	3234	3231	2210	1022	4445	4343	5456	4232	3343	1222	2122
Eb	3211	2235	4111	2211	1112	4655	4343	5566	4223	2344	1221	1121
TL	3221	2245	3011	2211	1013	4545	4443	5466	4233	3344	1322	3122
ST	4132	4354	4322	2111	1123	5544	4343	5445	4333	3354	1323	4222
Tu	4222	3333	3212	2211	1013	4444	5554	5556	5244	3333	1333	3222
Ke	3233	5454	4211	2211	1224	5545	4444	55--	332-	3454	2112	2232
SJ	3111	1325	3111	1211	1113	2334	4343	3355	4232	2222	1321	2112
Te	3112	4335	2222	3121	1013	2433	4442	3255	3122	2332	1222	3322
Ka	2222	2333	2112	3211	1113	4554	4454	5445	3233	3332	1222	3122
Ho	2122	2234	1011	2102	1013	2333	4343	3343	3133	3222	1112	2112
AL	2332	4244	3112	2211	1124	5534	2443	5555	2223	3342	1222	3222
Hu	2112	2444	3212	3422	0113	4654	3332	5555	3223	4443	1212	3433
Ap	3123	3235	3312	2212	2123	2433	4234	3354	3223	2323	0222	2123
Pi	3213	3355	4202	3431	2113	3434	3423	0665	4222	0333	0302	3343
Tn	3354	5445	4334	4332	2355	5655	3334	4454	4444	4343	3334	4333
Hr	3324	3334	3333	3201	0124	4543	4445	6433	3333	4343	0333	3212
Wa	3332	3234	3222	3212	2223	3433	5444	5445	3323	3332	2222	2122
To	3333	4334	3332	3112	3224	3433	4444	5455	4333	3333	3332	3122
Am	3233	3233	4221	3223	3123	3434	4453	5445	4233	3323	2322	3113

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Jan.	25	26	27	28	29	30
Tr	3111 2144	2010 1564	4433 2345	4532 3465	3323 2336	5321 1345
Co	1135 4110	0023 3563	2432 4422	3425 5443	1136 5232	3234 1433
So	2111 2133	1111 2575	3332 2345	4422 2466	2222 2335	4221 1455
Le	1221 2133	1111 2354	3322 2223	3322 2353	1222 1224	2222 2334
Do	1101 2033	0110 1464	3322 2233	3422 2453	0202 1234	2221 2345
Me	1143 3210	0133 2333	2553 2332	4534 3333	1244 4222	2133 1223
Si	1143 3210	0134 2443	2443 2332	2314 3333	1235 4222	2132 1223
Es	1121 2133	1011 2343	3332 2333	3222 3354	1223 2224	2121 2334
Lo	1111 3133	1111 2453	2332 2333	3222 3454	1223 1234	2222 2445
RS	1111 3133	0102 2443	3332 2333	3222 3453	2233 1233	2233 2444
Ag	1222 2221	1112 3333	3552 3333	4423 4333	3233 3233	3232 3323
Wn	2112 3143	1112 2444	3433 3334	3323 3454	2323 2334	3232 2445
Wl	1222 3243	1122 2444	3432 3334	3333 3454	2334 3334	3233 2445
Ab	1212 3133	0113 2444	3332 3333	3333 3354	1333 2333	3233 2334
Ni	1121 2133	1112 2443	3433 2333	3223 3453	3322 2334	3232 2444
Ma	1112 2132	1001 2443	2322 2333	3223 3454	2222 2233	2311 2334
Sw	111- --22	1111 2343	2322 2443	3222 3343	1222 2233	2221 2344
Na	1111 2132	1111 2443	3422 3333	3223 3453	2223 2233	2221 2334
CF	1122 3132	1112 2443	3423 3333	3223 3453	2323 2234	3222 2434
Ch	2222 1121	1212 2342	3542 1333	4323 3233	1333 2223	3222 2333
Fu	1111 3133	1132 2443	2422 3333	3233 3453	1313 2233	3232 2334
Eb	1101 2122	1112 3555	3322 2333	3322 2243	1213 1223	1121 2344
TL	1111 2132	1122 3454	3432 3333	3323 3343	2333 2233	3231 2344
SF	1112 2222	1133 3544	3341 3443	433- -333	2133 3333	2233 2444
Tu	1232 2111	0233 2442	3443 2343	3323 3344	2333 2333	3323 2323
Ks	1012 2122	0112 2644	3332 2344	4333 4354	2223 3343	2232 2434
SJ	1110 0120	0211 2332	2331 1332	3222 2233	1322 1232	3221 1333
Te	1122 2112	0222 4442	2242 4334	3323 2334	1222 3223	3123 3233
Ka	1123 2121	1212 4443	2232 3333	3223 3342	1223 2222	2232 2333
Ho	1122 1012	1212 2322	2321 1133	2213 2122	1223 1123	2232 1223
AL	2111 2122	1322 3544	4232 2332	3222 3453	1212 2222	2231 2334
Hu	1211 2232	0211 4565	2332 3453	2212 5444	1223 3444	3122 3544
Ap	2222 2033	0212 3353	4232 2143	2223 2133	1233 1033	2232 1233
Pi	2222 0342	0433 0332	1433 0341	3323 1344	2322 2333	3324 0444
Tn	2334 3232	3344 4655	3443 4444	4444 4454	2344 4444	3345 4545
Hr	1233 4111	0222 3444	2343 1333	3233 2434	1133 2223	2332 3434
Wa	1122 2122	3323 3352	3332 3323	4433 2343	4433 2332	4333 2433
To	3232 3112	2332 4453	3333 3434	4433 3434	-----	3343 1334
Am	2322 2112	2222 3333	3432 1233	3323 3333	3323 2223	3333 1323
Jan.	31					
Tr	6665 3566					
Co	3467 5553					
So	6555 5665					
Le	3554 3454					
Do	4554 3455					
Me	4577 5434					
Si	3677 6543					
Es	4454 3445					
Lo	3554 4455					
RS	4554 4444					
Ag	3577 4334					
Wn	4554 4455					
Wl	4564 4555					
Ab	4554 4445					
Ni	4553 4454					
Ma	4553 4444					
Sw	3453 4444					
Na	5553 3444					
CF	4553 4444					
Ch	4455 2333					
Fu	4534 4444					
Eb	4552 3544					
TL	4455 4444					
SF	4554 4445					
Tu	4565 4433					
Ks	4554 4565					
SJ	4353 2323					
Te	4454 4344					
Ka	4566 6443					
Ho	4544 3422					
AL	3544 4343					
Hu	3455 4443					
Ap	4543 4443					
Pi	4454 0324					
Tn	4565 5564					
Hr	4544 3443					
Wa	4454 5543					
To	4454 4544					
Am	4453 4443					

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Feb.	1	2	3	4	5	6
Tr	6534	3266	3210	2024	3010	0033
Co	4465	2122	2100	0011	1000	0121
So	6534	2255	2111	1013	2010	0032
Le	5432	2144	1210	1113	1110	1122
Do	5431	1154	2110	1013	0000	0121
Me	5554	2123	2100	0111	1000	0121
Si	4464	2012	2100	0011	1000	0121
Es	4422	2143	2100	1102	1000	1112
Lo	5422	2153	2211	1112	1011	1122
RS	5432	2254	2211	1113	1110	0122
Ag	4444	2233	2101	1221	1200	2231
Wn	5432	3154	2111	1113	2011	1122
Wi	5533	3154	2211	1113	2011	0122
Ab	4432	3244	2221	1212	1112	1212
Ni	5433	3154	2211	1123	1111	1122
Ma	5433	2154	2110	1102	1010	0122
Sw	4322	1143	2111	1112	1111	1122
Na	5422	2143	2210	1112	1111	1122
CF	5423	3153	2211	2112	1001	1122
Ch	4343	1133	2210	0111	1110	0221
Fu	4423	2143	2222	1102	1122	1212
Eb	5423	2143	2201	1112	2010	0122
TL	5433	2243	2211	1112	1010	0012
SF	5423	4233	2212	1111	1123	2212
Tu	4544	3223	1211	1021	1110	0222
Ks	6423	3354	3322	1113	1032	1233
SJ	3222	1233	2211	0221	1110	1121
Te	3333	4342	2211	2122	1110	1232
Ka	4334	3223	2301	1122	2110	1122
Ho	3223	1122	2211	0011	1010	0122
AL	5422	3243	2221	1122	1122	1122
Hu	3222	3343	2212	2232	1111	2332
Ap	4324	3233	2400	0202	0120	1032
Pi	3233	3332	3302	2223	2103	0123
Tn	6556	4344	3344	3233	2333	2233
Hr	5544	3344	2223	3221	1132	1222
Wa	4324	3242	3231	0011	2211	0132
To	4334	3234	3331	1123	3232	1133
Am	3323	2134	4320	0023	3210	0133
Feb.	7	8	9	10	11	12
Tr	3321	1244	4212	2666	5543	5566
Co	2112	1221	1134	4663	2334	5653
So	2221	1243	3212	2667	4432	5576
Le	2221	2233	3112	2583	3332	4455
Do	2220	1232	3122	2475	3333	5456
Me	2312	1212	1134	3543	3334	4534
Si	2312	1221	1133	3553	2334	4643
Es	2221	2222	3112	2464	2332	3444
Lo	2122	2242	3112	2564	3333	5555
RS	3221	1232	3212	2564	2333	4444
Ag	3421	2322	2133	3333	4432	3444
Wn	3221	1243	3213	3564	3343	5555
Wi	3232	1233	3223	3565	3333	4555
Ab	3221	2333	3122	2564	2333	4445
Ni	3221	1243	3222	3554	2333	5445
Ma	2221	1132	3122	2554	2332	3445
Sw	2222	1132	3112	2444	2333	4444
Na	3321	1232	3222	2554	2333	3444
CF	3222	2232	3223	2554	2334	4444
Ch	3421	1222	2133	2433	4332	4444
Fu	3211	2232	3212	3554	2333	4444
Eb	3211	1232	2112	3555	2333	3445
TL	3211	2132	3213	2554	2333	4445
SF	4323	2232	3122	2554	3331	4555
Tu	3322	1221	2233	2443	3343	3344
Ks	4212	2221	2112	2565	3333	45—
SJ	3211	2221	2111	2423	3331	2553
Te	3312	3233	2223	3533	2223	3243
Ka	3221	1231	1223	2443	2332	4344
Ho	3210	1221	1123	3322	2332	2223
AL	3211	2221	1113	2554	1223	4433
Hu	3211	2321	1111	3454	2212	5543
Ap	3211	1222	3223	2343	2232	1233
Pi	4312	2003	2210	0404	2323	3353
Tn	4343	2332	3445	3654	3244	4545
Hr	3322	1221	2323	2553	3323	4444
Wa	4422	1132	4233	1444	3332	4543
To	3332	2233	2323	3444	3333	4443
Am	4321	1223	2323	3434	3332	4323

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Feb.	13	14	15	16	17	18
Tr	5544	4465	4322	2255	1111	1134
Co	3336	6323	2224	2222	1113	2001
So	4423	3365	3221	2165	1111	1123
Le	3323	3244	2212	2243	1111	1123
Do	4422	3344	2222	2254	1111	1123
Me	3345	6323	2222	1222	1011	1001
Si	3345	5222	2233	1122	1012	2001
Es	3323	3344	2112	2243	1110	1013
Lo	4323	3344	2222	1153	1111	2123
RS	4333	3343	2122	2153	2121	1223
Ag	4434	3333	3232	2232	2111	2221
Wn	4323	4344	2222	2254	2111	2124
Wi	4334	4454	2222	2254	2111	2124
Ab	3333	3344	2233	3243	1123	2223
Ni	4323	3344	2222	2244	2111	1123
Ma	4333	3334	2222	1243	2211	2223
Sw	3222	3333	2111	2143	1111	2113
Na	4333	3343	2222	2243	2111	1113
CF	4333	3343	2223	2343	2111	2123
Ch	4433	3223	3222	2232	2111	1002
Fu	4333	3333	2122	2143	2122	2223
Eb	3323	3334	2112	2243	2100	1013
TL	4332	3344	2122	2243	2110	1013
SF	4323	3445	2221	1243	1211	3213
Tu	4334	3323	3222	2222	2211	1002
Ks	3315	4444	3112	3354	1001	1104
SJ	3221	1322	2101	1221	1101	1011
Te	3323	2332	3311	2231	1211	2012
Ka	2234	4333	3222	2233	2212	3112
Ho	2223	2222	1221	1222	2001	0002
AL	3223	3242	2122	1242	1221	1113
Hu	3212	4422	2102	3332	1201	2211
Ap	2224	3233	2311	1122	2221	1023
Pi	4311	0303	2301	2332	2202	0103
Tn	3433	4444	2233	3354	2222	3224
Hr	3333	4333	1332	2332	1311	2012
Wa	3134	4233	2211	1231	2111	3102
To	3334	4333	3222	2222	2213	3213
Am	3334	4222	4312	1122	3102	2012
Feb.	19	20	21	22	23	24
Tr	2212	2236	5211	1001	2322	2343
Co	0005	4221	1104	2010	0012	2232
So	1122	2235	4111	1001	1211	2342
Le	1113	2223	2111	1110	1211	2233
Do	0213	2324	3111	1001	2321	3342
Me	0215	2212	1213	1011	1133	2232
Si	0124	3221	1114	2010	1132	2233
Es	1123	2223	2112	0000	1221	3323
Lo	1213	3224	2111	0001	1212	2343
RS	1223	2224	2212	0100	2221	2333
Ag	1323	3224	2312	3232	3233	3222
Wn	1224	3224	3212	1111	2222	3343
Wi	2224	3234	3212	1011	2222	3333
Ab	1223	3333	3112	2211	2222	3333
Ni	1213	2224	3112	1111	2221	2333
Ma	2233	3224	2222	1010	1212	2333
Sw	1113	2223	2111	1101	1211	2332
Na	1223	2223	2211	1011	2221	2333
CF	1223	3224	3212	1011	2222	2333
Ch	1323	2223	2212	1020	3233	3233
Fu	1133	2323	2221	2100	2221	2333
Eb	1213	3223	2201	2011	1221	2333
TL	1223	3423	3211	1010	2221	2334
SF	2223	2433	3122	2112	1113	2434
Tu	2224	3334	2313	1010	2233	3222
Ks	1214	3223	2111	1011	0102	2343
SJ	0212	2223	1201	1010	2122	1333
Te	1213	3124	2112	2012	1222	2343
Ka	1214	3222	2102	2111	1112	1332
Ho	0112	2222	1202	1011	0002	0222
AL	2223	2222	2112	2111	1111	2243
Hu	1222	3333	1101	3222	1121	4443
Ap	2223	2223	2202	1021	3111	2224
Pi	0313	1204	2202	0401	1222	1413
Tn	2334	3333	3222	1122	1334	2344
Hr	0333	3113	2101	2010	0122	2334
Wa	4434	2223	4401	1012	3332	2343
To	4334	3233	4223	1112	3232	2343
Am	2223	2212	1203	1001	1212	1222

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Feb.	25	26	27	28
Tr	5433 2357	2332 4564	7453 5434	5664 3355
Co	3325 3323	3233 6432	5574 5434	3675 3233
So	5323 2247	1122 4563	7643 4544	4554 3346
Le	3212 2335	2222 3442	7643 3333	4764 4334
Do	3213 2336	1122 3452	7733 4444	4663 4444
Me	3425 3333	2344 4432	6573 4333	4775 4333
Si	3424 3323	2333 5422	5684 4343	4575 3332
Es	3222 2325	1222 3442	6433 3444	4554 4433
Lo	3212 2335	2222 3452	6534 4434	4654 4344
RS	3323 2335	2222 3552	6533 4445	4564 4444
Ag	4423 3324	1432 3322	7653 4344	4884 4333
Wn	3323 2335	2223 4553	7433 4445	5564 4444
Wi	4322 2335	2232 4453	7433 4555	4564 4444
Ab	3223 2335	2223 4442	6433 4555	5555 4434
Ni	3322 2334	2233 4452	6433 4444	4554 4344
Ma	3322 2224	2222 3442	6433 3433	3553 4334
Sw	3323 2334	2123 3442	5333 4444	4553 4243
Na	3312 2224	1212 3442	6432 3444	4544 4334
CF	3323 3334	2223 3442	6433 4444	4554 3333
Ch	4412 3224	2432 2233	6542 3354	5664 4333
Fu	3233 2324	2222 4442	6322 3444	4554 3333
Eb	3212 2335	2222 4443	6432 3444	4655 3223
TL	4322 2325	2222 4342	6443 4444	4654 3334
SF	4313 3435	2223 5343	7444 3545	5654 4345
Tu	4423 3314	2342 3332	6453 3444	5665 3333
Ks	4323 2225	2111 5443	5434 4555	5656 4434
SJ	4312 2113	1221 2332	6342 2444	4654 3233
Te	4321 2224	2231 ----	---- -354	5664 4243
Ka	3323 3323	3222 4432	5555 5435	5665 4332
Ho	2213 2124	2232 3222	6443 2345	5655 3232
Al	2222 2223	2222 3432	4233 4445	5765 4233
Hu	3312 3333	1123 4431	6442 4555	3653 4543
Ap	2013 2223	3331 3333	5344 3344	5644 3133
Pi	4303 0304	2232 0302	6443 2435	5755 4433
Tn	4334 3335	3232 4443	6555 5555	6766 5445
Hr	3342 2214	1332 4332	6433 3434	4665 4334
Wa	4223 3334	3333 4542	5444 5543	5654 4343
To	4324 3323	3333 4433	5444 4433	4765 4333
Am	4213 3213	3332 3322	5443 3344	5765 3234

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

March	1	2	3	4	5	6
Tr	5543	4312	1012	3225	4132	2230
Co	4435	4321	1003	4211	1124	2310
So	5323	3211	0112	3223	3221	2220
Le	4322	2211	0012	2212	2231	1211
Do	4323	3311	0112	3213	1232	2320
Me	5434	4212	0022	3222	1553	2211
Si	3424	4221	0022	3311	1233	3220
Es	3323	3211	0012	3213	1232	2210
Lo	4422	3211	0122	3223	2132	1220
RS	3432	2211	0112	3222	2232	1220
Ag	5433	3321	0022	3212	1233	3321
Wn	4423	3221	0112	3223	1243	2221
Wi	4433	3322	1012	3223	2242	2321
Ab	4433	3311	0113	3313	2232	2211
Ni	3423	3221	0012	3223	2232	2320
Ma	3322	3222	1122	3213	1232	2310
Sw	3323	2211	0012	3212	1232	2220
Na	3323	3311	0112	3223	2232	2210
CF	4323	3221	0012	3123	2233	2220
Ch	4313	3222	0121	3222	1343	2221
Fu	3333	2211	0023	3213	2133	3210
Eb	3313	3421	0112	3223	2232	2210
TL	4323	3311	0012	4213	2133	2210
SF	4323	3322	1133	4134	3233	3311
Tu	4423	3211	0122	2222	1343	1211
Ks	4234	3221	0021	3213	3233	3220
SJ	3312	2110	0111	2212	1232	1211
Te	4322	3132	1120	2224	1232	2131
Ka	3323	4311	0111	3212	1232	2310
Ho	3222	1121	0011	2122	0233	1211
Al	3232	2221	1221	3212	1322	2221
Hu	3323	3421	0012	4433	0222	3421
Ap	3222	2121	3010	2222	2232	1201
Pi	3413	3201	0012	2423	0231	3202
Tn	4433	4322	1233	4333	1133	3322
Hr	4324	4321	1222	3212	2332	2210
Wa	4334	4322	3222	3223	3232	2212
To	4334	4322	2222	3312	2332	2322
Am	3323	2112	1111	3212	2222	0213
March	7	8	9	10	11	12
Tr	4523	5466	4334	5776	5544	3556
Co	2125	7644	3356	6544	3456	5535
So	4413	5576	4324	4556	5534	3456
Le	3312	4466	3224	4445	4333	3347
Do	4323	6577	4325	5566	5433	3457
Me	2226	7434	3356	5434	4465	4336
Si	2125	8533	3346	6533	3344	4335
Es	3223	5455	3234	3554	4333	3345
Lo	3234	5465	3235	4556	4333	3445
RS	3334	5455	3235	4555	4333	3445
Ag	4424	5444	4346	4444	4444	3346
Wn	4314	5455	4235	5665	4433	3455
Wi	4324	5456	4335	5665	4333	3445
Ab	3334	5455	3235	4555	4333	3344
Ni	3313	5455	3225	5655	4333	3444
Ma	3313	4455	3225	4555	4333	3444
Sw	3213	4344	3224	4555	4322	3344
Na	3323	4455	3224	4554	4333	3445
CF	3324	5455	3234	4555	4333	3445
Ch	4423	5444	4235	4444	4433	3335
Fu	3244	5454	3234	4555	4443	3344
Eb	3223	4555	3213	4554	3322	2334
TL	3345	5564	3234	5455	4443	3345
SF	4444	5565	4245	5566	5423	4444
Tu	2333	5443	3345	3343	4334	3334
Ks	3136	6565	3215	5665	4333	4444
SJ	3312	4343	4324	3334	3333	2224
Te	2132	4343	3334	2333	3332	---
Ka	2135	6543	3225	4433	2334	3334
Ho	1024	4233	2235	2333	2233	2134
Al	2126	6452	2225	3443	2222	3434
Hu	2233	6553	3232	4544	3223	3434
Ap	2234	4243	3134	2333	3323	4134
Pi	3344	5433	4333	3334	3322	3244
Tn	3335	6564	2235	4555	4343	4444
Hr	3334	6565	3234	4455	3333	3335
Wa	3325	5544	2335	4554	3434	3435
To	2335	5443	3335	4544	3445	3335
Am	3134	5332	3344	4433	3334	3334

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

March	13	14	15	16	17	18
Tr	5434	5776	5544	5675	6422	3100
Co	2237	6664	3455	6544	3431	2110
So	3232	4777	6434	5665	6422	2211
Le	3323	4787	6442	4475	7322	2211
Do	3323	5788	7542	6586	8323	3211
Me	2356	7555	5465	5453	6442	2211
Si	2246	6655	4456	6543	4331	1121
Es	2223	4565	5332	3463	5332	2220
Lo	2323	4677	5543	5473	6423	2210
RS	2323	4676	4432	4463	5422	2210
Ag	4335	4455	5554	4365	6332	3221
Wn	3324	4676	4443	4564	6423	3321
Wi	2334	4576	4443	4563	5423	3321
Ab	2334	4466	4433	4463	5433	3321
Ni	2333	4676	4442	4554	5422	2221
Ma	2334	4566	3433	4453	5422	2221
Sw	2223	4665	3432	3453	4322	2210
Na	2324	3666	3433	3453	5322	2221
CF	2324	4466	3433	4553	5432	2220
Ch	4335	5445	5453	4353	5332	2121
Fu	3224	4365	3433	4453	5333	1110
Eb	3214	3565	3332	3463	4323	2221
TL	3324	4466	4443	4463	5333	2221
SF	3434	5577	4444	3364	6333	----
Tu	2335	4444	5553	3343	4432	2211
Ks	2234	4475	3244	4463	5334	3332
SJ	3224	3345	3432	2132	3322	1221
Te	1234	3544	5443	4143	4432	3333
Ka	1224	5455	2444	5443	3323	2222
Ho	1324	3344	4453	3333	4322	2121
Al	1125	3554	3323	4343	3423	2221
Hu	2123	5455	3333	4434	5323	4431
Ap	2333	4354	5442	3332	3322	2--2
Pi	3233	3245	3433	3144	5523	2201
Tn	3236	5575	3235	5463	5444	3333
Hr	3325	3466	4445	3363	5333	2211
Wa	2225	5555	3345	5444	5333	1111
To	3234	5455	4445	5453	4433	2322
Am	2234	5444	3344	4443	4332	1011
March	19	20	21	22	23	24
Tr	5322	1223	2003	4321	0001	2235
Co	3243	2211	0023	2021	1005	5312
So	5222	2122	1013	4321	0001	1125
Le	3221	1221	0112	3311	1111	1213
Do	4222	0121	0003	4311	0021	2224
Me	3252	1221	1106	6211	1032	1112
Si	2253	1221	0005	5211	1032	1123
Es	3322	1211	0003	3311	1111	1124
Lo	3232	1121	1013	4221	0111	2124
RS	3232	1121	0013	3311	0011	1123
Ag	4342	1220	0114	4210	0132	2223
Wn	3232	1222	1113	4321	1112	2234
Wi	3332	1222	1114	4311	0112	1134
Ab	3333	1211	1123	3311	1122	3134
Ni	3232	1122	1113	4321	1111	1123
Ma	3221	1121	1113	4210	0011	1123
Sw	2222	1121	0123	3211	0112	1123
Na	3332	1221	1113	3211	1011	1123
CF	3333	1222	1113	3320	1022	1123
Ch	4342	1221	1114	4221	1131	1123
Fu	3322	2121	0124	3211	1111	3123
Eb	2222	1211	1104	3211	0011	0124
TL	3232	1211	0104	3210	1011	1123
SF	3322	2101	0125	1321	1133	3034
Tu	3342	1210	1124	4311	0132	1122
Ks	3232	1221	0015	3221	0011	----
SJ	3231	0100	0102	2211	1021	1122
Te	3242	3122	0123	3221	2132	2223
Ka	2232	1210	1115	5310	0011	1122
Ho	2232	1111	0003	3111	0010	0123
Al	2322	1221	1115	2221	0122	1222
Hu	3231	2310	0013	4420	0021	2231
Ap	3222	0212	2224	3120	1122	0023
Pi	3232	2000	0113	3322	1020	3123
Tn	3333	3333	1215	4432	1133	2243
Hr	3233	1211	1124	4211	1122	2123
Wa	2332	0110	3215	4200	3320	0112
To	3333	2222	3325	4312	3232	2223
Am	2232	0013	1223	2102	0122	1013
Tr	5322	1223	2003	4321	0001	2235
Co	3243	2211	0023	2021	1005	5312
So	5222	2122	1013	4321	0001	1125
Le	3221	1221	0112	3311	1111	1213
Do	4222	0121	0003	4311	0021	2224
Me	3252	1221	1106	6211	1032	1112
Si	2253	1221	0005	5211	1032	1123
Es	3322	1211	0003	3311	1111	1124
Lo	3232	1121	1013	4221	0111	2124
RS	3232	1121	0013	3311	0011	1123
Ag	4342	1220	0114	4210	0132	2223
Wn	3232	1222	1113	4321	1112	2234
Wi	3332	1222	1114	4311	0112	1134
Ab	3333	1211	1123	3311	1122	3134
Ni	3232	1122	1113	4321	1111	1123
Ma	3221	1121	1113	4210	0011	1123
Sw	2222	1121	0123	3211	0112	1123
Na	3332	1221	1113	3211	1011	1123
CF	3333	1222	1113	3320	1022	1123
Ch	4342	1221	1114	4221	1131	1123
Fu	3322	2121	0124	3211	1111	3123
Eb	2222	1211	1104	3211	0011	0124
TL	3232	1211	0104	3210	1011	1123
SF	3322	2101	0125	1321	1133	3034
Tu	3342	1210	1124	4311	0132	1122
Ks	3232	1221	0015	3221	0011	----
SJ	3231	0100	0102	2211	1021	1122
Te	3242	3122	0123	3221	2132	2223
Ka	2232	1210	1115	5310	0011	1122
Ho	2232	1111	0003	3111	0010	0123
Al	2322	1221	1115	2221	0122	1222
Hu	3231	2310	0013	4420	0021	2231
Ap	3222	0212	2224	3120	1122	0023
Pi	3232	2000	0113	3322	1020	3123
Tn	3333	3333	1215	4432	1133	2243
Hr	3233	1211	1124	4211	1122	2123
Wa	2332	0110	3215	4200	3320	0112
To	3333	2222	3325	4312	3232	2223
Am	2232	0013	1223	2102	0122	1013

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

March	25	26	27	28	29	30
Tr	5624 3346	6523 4375	6523 2324	3201 1202	1334 5546	5213 2113
Co	4427 4322	3235 5333	2434 3311	1100 2111	1453 6653	2233 2011
So	4513 3315	5423 3355	4-22 2223	2101 2101	1334 4446	5213 2111
Le	3412 3214	3322 3234	3422 2323	2211 1211	1343 3554	4212 2112
Do	4503 3213	4432 3344	3422 2223	3001 1201	1343 4565	5203 2112
Me	5526 4212	2334 4222	3544 1101	1100 1112	1565 6433	2343 2111
Si	3416 4222	3234 3332	2543 2211	1000 1112	0453 6433	2243 2111
Es	3413 3213	3233 2244	3321 3322	2010 2211	1343 3344	3112 3212
Lo	3413 3314	3323 3244	3322 2323	3102 2212	1343 5555	4212 2211
RS	3423 3313	3223 3244	3322 2322	3000 1101	1343 4444	4222 2112
Ag	4524 3323	4333 3233	3633 2222	2110 1222	0464 5334	4342 3212
Wn	3424 3323	3233 3245	3333 2323	3100 1212	1344 3545	4213 3222
Wi	3424 2323	3233 3355	3442 3323	3000 2211	1443 4444	4212 3223
Ab	3424 3313	3133 3344	3322 3333	3111 2221	1344 4344	4213 3222
Ni	3423 2313	3233 3244	3322 2323	3000 1212	1343 3444	4213 3222
Ma	3313 3312	3222 2234	3312 1222	2000 1101	0222 3334	3212 2111
Sw	3323 3313	2223 3234	2223 2223	2121 2111	0233 3334	3213 2112
Na	3423 3313	3233 2244	3322 2322	2001 1111	1342 3334	4212 2222
GF	3433 3233	3234 3344	3333 2223	2001 1111	0334 3434	4223 2122
Ch	3413 3223	3333 2223	3632 1111	2110 1023	0454 4334	3332 2222
Fu	3423 2213	3122 2233	3322 2322	2020 1111	1333 4434	4233 2112
Eb	3313 3213	3222 2233	2311 1212	2000 1111	1332 4444	4202 2122
TL	3423 3213	3233 3244	3332 1322	2000 1111	1344 4434	4212 3222
SF	3434 3224	3332 3344	3314 1222	3003 1221	1444 5334	5323 3312
Tu	4423 3323	3333 2233	3532 1222	1010 2113	0544 4323	2232 3111
Ks	3314 4324	32--	--23 2323	1000 1112	0343 5334	5003 5333
SJ	3311 0122	2232 2233	3421 0221	2100 1111	0243 3223	3111 3221
Te	3413 3334	3232 3343	3421 3223	0010 3222	0443 --	--333
Ka	3323 3222	2233 4223	2323 1221	0000 2112	1355 4443	2222 3222
Ho	3313 1111	2123 2123	2312 1001	0000 0022	1444 4312	2112 2122
Al	2314 2312	2133 3243	1322 1212	1000 1112	1353 5334	3112 3122
Hu	3303 4432	2221 3332	3412 3211	0001 2211	0341 4433	2113 4321
Ap	4423 1112	3223 2223	3412 0122	2200 2023	1545 4333	2222 3223
Pi	3402 2223	4220 3253	3511 3133	2001 3232	0343 4354	4322 3321
Tn	3345 4323	3233 3344	3343 2334	2244 3333	2353 6445	5233 3222
Hr	2524 3323	3234 2234	1333 1222	2011 1111	1445 5344	4133 3211
Wa	3433 3311	4333 3243	4422 1311	2300 1001	2444 5545	3322 3101
To	3424 4223	4333 4333	2433 2312	2111 2113	3455 5454	3323 3222
Am	3314 3123	3233 3232	2323 2122	1010 1011	0444 5333	2122 2101
March	31					
Tr	2011 2433					
Co	1132 2331					
So	1121 2432					
Le	1122 2334					
Do	0020 2321					
Me	2143 1212					
Si	1123 1321					
Es	1122 2321					
Lo	1122 2332					
RS	1122 2332					
Ag	1232 2322					
Wn	1131 2332					
Wi	1132 2331					
Ab	1133 2331					
Ni	1131 1332					
Ma	1121 2333					
Sw	1121 2221					
Na	1121 2331					
GF	2132 2232					
Ch	1132 2322					
Fu	1032 2332					
Eb	1120 2431					
TL	1121 3332					
SF	1232 3432					
Tu	1232 2322					
Ks	1132 3342					
SJ	1121 1321					
Te	1231					
Ka	1123 2331					
Ho	0132 1211					
Al	1231 3221					
Hu	0121 3431					
Ap	2232 1132					
Pi	0220 2301					
Tn	1233 4442					
Hr	0221 2331					
Wa	1331 2331					
To	2232 2432					
Am	1232 1311					

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

April	1	2	3	4	5	6
Tr	3310 1246	4423 5565	6664 5666	5644 5557	7644 4466	5554 5467
Co	1114 2112	3354 6644	4455 5745	4466 7733	5557 6544	3567 7654
So	1112 1235	4322 5556	6543 3666	5544 5556	6535 5456	5444 5467
Le	2101 1224	3321 3545	6433 4564	4543 4536	6654 4344	3443 3466
Do	3002 0124	3212 3645	5432 3676	5544 5546	6645 5345	5444 4577
Me	2125 1113	3364 5444	5566 6544	3676 6535	5666 5433	3576 6445
Si	1124 1122	3353 6444	4666 6644	4565 6633	5756 6544	3566 5544
Es	2011 1223	3321 3544	4333 4554	4443 4535	4444 4344	3433 4455
Lo	2102 0224	3322 4545	6434 4655	4443 4635	5534 5344	4533 4566
RS	2112 0223	3322 3544	5434 4654	4433 4634	5534 5344	3543 4555
Ag	3223 1123	4433 4455	6555 4556	5554 5534	6754 4444	5554 4445
Wn	3112 1224	3332 3555	5434 4665	4443 4635	5534 5444	4443 4566
Wi	3112 0224	3333 3545	5434 4665	5443 4634	5544 5444	4443 4556
Ab	2122 1123	3332 3544	4334 4554	4443 4534	4435 4344	3433 4455
Ni	3112 1123	3322 3544	4434 3654	4443 4634	5534 5344	4433 4555
Ma	3122 3222	3222 3544	4334 3654	4333 4635	4334 4334	3433 4555
Sw	2122 1123	3322 2444	4323 4544	3333 3534	4433 5333	3333 3554
Na	2112 0123	3332 3544	5333 3554	4333 4634	4434 4344	3433 4455
CF	3112 0124	3333 3544	5333 4544	4434 4634	4434 4344	4434 3455
Ch	3113 0023	3332 3354	5344 3545	5543 4545	5643 5333	4553 4445
Fu	2122 1113	3332 3544	3334 3544	4433 3534	4344 4344	3433 3455
Eb	2102 0122	3232 3544	5424 3554	5332 3535	3323 3334	3433 3355
TL	2102 0023	3332 4544	5334 4554	5433 4544	4444 4344	3443 3455
SF	3212 1034	3332 4555	5445 3665	4444 4645	5434 4334	4443 4446
Tu	2123 1013	3442 4454	5444 3545	4543 4534	5554 4454	4554 5444
Ks	1002 0024	3432 5655	5435 4654	3444 5645	4535 5545	3434 5455
SJ	1002 0022	2332 2255	4333 3534	5432 4433	4533 3344	4432 3345
Te	1122 3324	3332 5354	5433 4545	4433 3435	4553 3254	4532 4443
Ka	1102 0123	2333 4433	5545 4443	3444 5534	5345 4323	2444 4444
Ho	1102 0012	2332 3233	5544 2333	3453 3323	5444 3333	2343 4233
AL	1112 1122	2332 4543	3534 4543	3343 4534	3224 4444	3423 4452
Hu	1002 2322	2332 3764	3323 3544	4333 5444	4433 4444	3322 3443
Ap	2122 1222	2332 3343	5544 2353	444- ---3	4344 3343	3453 3243
Pi	1002 3334	2330 1455	4324 4524	5433 4435	4533 2355	4422 4355
Tn	2223 2224	3333 5654	5546 5654	3334 5655	3234 4545	3433 5455
Hr	2222 0212	3333 5545	4435 5553	4433 4544	4534 3444	4443 4435
Wa	2311 0012	2222 4445	4536 5554	3444 5534	4335 5545	3444 5544
To	4222 2122	3333 4444	4546 4544	3455 5535	4446 5455	3455 5545
Am	1112 0010	3242 4344	4544 3443	3454 5423	4445 4344	3454 4445
April	7	8	9	10	11	12
Tr	7634 4456	6533 4466	3334 3444	6632 4353	4531 3225	6423 4447
Co	4546 6543	3444 4433	3356 6442	4344 5332	3334 4312	3224 5412
So	7-34 5466	6433 3455	---34 3344	5422 4253	4321 3215	4322 3337
Le	5533 4445	5432 3345	3322 3442	6422 3233	3321 2215	4421 2236
Do	6633 4456	6433 3446	3333 3443	6432 3344	4320 2106	4323 0237
Me	4656 5333	5553 4223	3466 5333	43-- --23	2443 2214	3433 3214
Si	4655 5533	3453 3333	2355 5332	4244 4232	2343 2212	3233 3323
Es	4423 3434	4332 3334	3333 4332	4332 3233	3221 3214	3221 2335
Lo	5433 4454	5323 3444	3323 4343	4324 3343	3222 2104	4323 2336
RS	5323 3454	4333 3344	3333 3343	4222 3243	3222 2204	4232 1335
Ag	5744 4334	4543 3234	4453 3234	6344 3233	4442 3224	4422 3335
Wn	5433 4455	5443 3445	3333 4343	4233 4244	4221 3215	4232 2336
Wi	5433 4454	5443 3355	3334 5343	5233 4244	4222 3214	4222 2336
Ab	5433 3444	4332 3344	3333 4343	4233 3243	3222 3314	4233 3335
Ni	5333 4454	5333 3344	3333 4343	4233 3243	4311 2214	4232 2335
Ma	5333 3444	4332 3244	3332 4333	4432 3133	3221 3214	4222 2235
Sw	4323 3343	4333 2344	3323 3333	4222 3133	3221 2103	3222 2235
Na	4323 3344	4333 3344	3333 4332	4232 3233	3221 2214	4232 2335
CF	5334 3444	4333 3444	3334 4333	4233 3243	3222 3214	4232 2335
Ch	5633 3344	4443 2234	4443 2233	5344 3133	4443 2124	4322 1224
Fu	5423 3444	4333 3343	3333 4333	4232 2233	3222 3213	4122 3325
Eb	5322 3445	5242 2355	2233 4443	4332 2133	3110 3213	4121 3325
TL	5333 3445	5343 3345	3343 4343	4333 3143	3321 3214	3232 4325
SF	5433 3555	5343 3445	3344 4453	5333 2244	4333 3324	4213 5435
Tu	4654 3444	4443 3323	3443 3323	5233 4133	3342 2213	3222 2114
Ks	4343 3334	4333 3255	2345 4343	4232 4343	3332 4313	5343 5336
SJ	5423 2443	3232 3223	3331 1233	5331 2143	3230 1213	4122 0125
Te	4542 2444	3332 2332	2341 2333	3233 3242	3232 2214	3322 2325
Ka	3333 5433	3242 3332	2243 3333	4332 3232	3222 3212	3333 3224
Ho	3323 2333	2342 2122	1242 2112	2122 3022	2130 1111	2021 2114
AL	1333 4342	2243 2342	2234 4232	3222 2232	2111 2212	3133 3224
Hu	4223 3443	2221 3332	3332 4332	3222 4233	2222 3323	3122 3344
Ap	3333 2233	3332 3122	1233 2222	4332 3232	3232 2224	3323 2224
Pi	5332 3543	3333 3403	3323 3303	5232 3253	3221 2324	4222 0335
Tn	3343 4444	3353 4455	3344 4453	4333 3343	4432 4323	4333 4446
Hr	5333 5455	4342 3445	3344 4443	4322 3344	3332 2303	4333 3425
Wa	3334 5452	3343 3342	2244 4443	4322 4242	3211 4203	4222 4315
To	5444 4444	3343 3443	4344 4443	3333 5233	4332 3324	4223 4325
Am	3443 4433	3332 2322	1343 3332	3233 4222	2232 3213	3222 3223

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

April	13	14	15	16	17	18
Tr	7435	6446	5444	4244	4003	3443
Co	4336	7433	4336	5322	2214	4311
So	6435	5436	5333	4234	3113	3332
Le	7424	5435	4323	3323	2112	3332
Do	7435	6436	6434	3333	3003	3332
Me	4435	7434	4456	4322	1323	3211
Si	4327	7433	4345	4222	2223	3211
Es	5434	5335	3333	3223	2112	3322
Lo	6435	5425	4334	3233	3113	3332
RS	5434	5425	4233	2233	3113	3332
Ag	6524	5344	5444	2323	3312	2223
Wn	5435	5536	4334	3333	3213	3333
Wi	6435	5436	4334	3233	2112	3332
Ab	5434	5435	4333	3333	2122	3332
Ni	5435	5436	4333	2233	3213	3332
Ma	3424	5425	4323	2222	2212	2322
Sw	5424	5315	3223	2222	2122	1322
Na	5434	4335	3323	2222	2212	2223
CF	5435	4435	3333	2233	3222	2323
Ch	5534	5334	5343	2223	3212	2222
Fu	5434	4335	3233	2232	2123	2332
Eb	5423	5334	4222	1123	2102	1212
TL	5434	5335	4333	2123	2212	1322
SF	6435	4345	4334	2333	2222	2333
Tu	4444	5333	4433	2213	2322	2211
Ks	4336	5433	3343	4222	1013	2431
SJ	4334	4333	4332	1112	2213	0211
Te	4444	4333	4322	3324	3221	2213
Ka	4445	5334	4334	2222	2112	3232
Ho	4333	3222	3223	1111	1012	1111
Al	4445	5433	3232	2221	2212	2311
Hu	4333	5534	3312	4232	1201	3332
Ap	4334	2233	2323	1222	3102	0012
Pi	5433	4305	4312	1202	1322	1301
Tn	6456	5443	3343	3233	2233	2322
Hr	5334	5333	4333	3211	1333	3222
Wa	5335	5333	3333	1232	1223	2320
To	4335	4334	4334	2333	3223	3323
Am	4434	5232	4333	1222	2112	2021
April	19	20	21	22	23	24
Tr	7223	3336	6532	5666	6645	5436
Co	3224	3223	3445	5664	5347	6632
So	5123	2336	6323	5667	6635	4436
Le	5222	2225	4232	3667	6644	4335
Do	6223	2226	5223	5678	7735	5416
Me	5333	2223	3434	3655	6567	7435
Si	4123	2223	2534	4554	6557	7524
Es	4223	2224	2322	3555	4434	4323
Lo	5324	2315	4323	4566	6534	4425
RS	5233	2213	3233	3465	5434	3424
Ag	5333	2324	3533	3466	5656	5435
Wn	5223	2224	3222	4566	5534	3424
Wi	5333	2224	3322	3566	5544	4424
Ab	5333	3314	2332	3455	5434	4313
Ni	5333	2224	3322	3565	5534	3424
Ma	5223	2214	2222	3555	5434	3323
Sw	4223	2213	3222	3455	4434	3323
Na	4223	2224	2323	3455	4434	3324
CF	4223	2224	2333	3555	5434	3423
Ch	4233	2223	2533	3445	5544	3334
Fu	5234	3214	2333	3555	4434	3324
Eb	5122	2114	3222	3455	5434	4314
TL	5223	3214	3332	3455	5444	4324
SF	6333	3325	3333	3445	6435	3325
Tu	5333	1212	3432	3545	4544	4323
Ks	5133	2225	3331	3566	5345	5334
SJ	4222	1113	2332	2345	4534	3213
Te	5322	2224	2432	2445	4433	3214
Ka	4353	2324	4233	3445	5444	4343
Ho	2123	1113	3322	2434	5332	4223
Al	3433	2223	2222	3453	3435	3422
Hu	4322	3333	2321	3554	3433	4433
Ap	43--	---	3332	2444	4442	4233
Pi	5322	2333	2423	2545	3543	3333
Tn	4343	4324	2345	4565	5456	4534
Hr	5233	3113	2342	3455	5455	3424
Wa	4223	1103	1333	3555	4435	5533
To	4334	2224	4333	3555	5545	5434
Am	3223	1113	3323	3444	5445	4323

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

April	25	26	27	28	29	30
Tr	7655 3554	5321 2330	0121 3445	4212 2222	5512 3500	0001 1002
Co	5574 4633	4333 3210	1122 4322	3113 2111	2224 5511	0012 3001
So	--55 3555	5212 1320	0121 3444	4112 2212	4423 --411	0111 2102
Le	5543 3555	7211 1320	1021 3333	3221 1221	3321 3311	1111 1101
Do	6644 4556	8200 0320	0011 3423	4111 2221	3421 4410	0101 0001
Me	6765 5334	5354 1210	1132 2323	3214 1122	3333 3311	1121 1112
Si	6585 5543	5333 2210	0112 3233	3123 2222	3334 3321	0021 1002
Es	5533 3553	5221 1321	1121 3333	3122 1221	3322 3321	0111 2001
Lo	4534 3545	6211 2320	1121 3433	3212 2212	3322 4411	1222 1012
RS	4434 3444	5210 1320	1111 3333	3122 1221	3322 3420	0121 1001
Ag	7655 4445	7332 1320	0332 3333	4213 3322	5423 3331	1111 2212
Wn	5434 3544	6211 2320	1122 3433	3212 2322	4322 4421	0112 2112
Wl	5434 3543	5211 2320	0122 3433	3212 2332	4322 4432	1112 2112
Ab	4433 3553	5212 2320	0123 3333	3123 2221	3322 3331	1122 2111
Ni	4434 3544	5221 2321	1122 3333	3212 2222	3212 3421	1111 1112
Ma	4433 3543	5110 2220	1122 2323	3111 2322	3222 3421	1011 1112
Sw	4334 3533	5221 1210	1122 2333	3112 2221	3322 3421	0122 1101
Na	4333 3443	5210 1210	1121 2323	3111 1222	3222 3321	0111 1101
CF	4334 3433	5222 1210	1122 3323	3222 2222	3222 3421	1111 2102
Ch	5643 3444	5222 1221	1332 2333	3122 1322	4423 2322	0110 1212
Fu	4424 3433	5212 2210	0222 3323	3122 2221	3322 3321	1223 3102
Eb	4333 2433	5211 1220	1011 2422	2111 1221	2111 2331	0000 1102
TL	4443 3444	5210 1220	0112 3423	3122 2222	3222 3331	1001 1012
SF	-----	-----	-----	-----	-----	-----
Tu	5544 3423	4232 1210	1233 3433	3222 2122	4423 3222	0111 2112
Ks	4535 3543	4322 1330	0023 4433	1021 2231	1022 333-	--33 2102
SJ	5524 2333	4111 1220	0111 2332	2111 1112	3312 1322	0110 1213
Te	4533 4344	4122 2333	1233 3334	3212 2333	3112 2333	0110 3212
Ka	3344 5534	2212 2320	1133 3333	3222 2222	2323 2321	1211 1112
Ho	3444 3322	2110 0110	0011 2322	2111 1111	2211 2232	0000 0001
Al	3233 3432	3211 1220	1112 3422	2222 2221	3222 2321	1121 1112
Hu	4423 4443	3112 3421	0111 3433	2111 3331	2221 3431	0001 2301
Ap	3344 3443	3224 2232	3223 3333	2221 1232	2323 2221	1210 1122
Pi	5534 3353	4222 0322	0123 1403	3223 0132	3203 0202	0012 1203
Tn	4454 4544	5444 2330	0134 4544	3333 2222	3344 3432	1244 2123
Hr	4434 3434	5322 3212	0222 3423	2323 4211	3223 3321	0322 3202
Wa	3443 5523	3423 2110	2212 3412	3221 1112	3432 2312	2320 1002
To	3454 5533	3323 3222	3323 3423	3232 2223	3433 3422	2321 2212
Am	3454 5532	2223 1211	1122 2312	3221 1222	3422 3221	2100 0022

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

May	1	2	3	4	5	6
Tr	5443	3557	6245	5576	5334	5566
Co	3456	3565	4246	6643	3355	4543
So	5333	3577	7344	5576	5324	4466
Le	3434	3568	8334	5465	6223	4445
Do	4444	3579	9344	6676	6334	5556
Me	3677	3356	6267	7544	4365	4334
Si	3557	3545	5367	7644	4244	4443
Es	3343	2467	6234	4465	4123	3455
Lo	4444	3579	7234	5556	5233	4455
RS	3444	3467	7234	5466	4233	3555
Ag	3667	4467	7255	5545	5443	3435
Wn	3344	3567	6244	5566	5233	4565
Wi	4444	3467	7244	5466	5233	4565
Ab	4344	3466	6244	5566	4133	3555
Ni	3434	3556	6234	5556	4233	3454
Ma	4434	3466	6233	5455	4223	3452
Sw	3333	3446	5234	4555	3123	3454
Na	4333	3456	6243	4455	4232	3454
CF	3443	3456	6343	4455	4233	3454
Ch	4565	2456	7244	4545	5343	3345
Fu	3333	4455	6223	3455	4223	3453
Eb	3333	3355	5243	4455	4222	3454
TL	4343	3466	6344	4566	4233	3454
SF	434-	4467	6334	3667	4223	3435
Tu	4564	2436	6345	4543	3243	3353
Ks	3534	4467	5255	6666	2234	4554
SJ	4453	2245	6133	3534	3222	2333
Te	4453	3356	6344	2443	3232	2333
Ka	3545	3456	5345	5533	3233	4343
Ho	2454	2245	4135	2333	2243	2222
AL	2555	2456	3344	5454	1222	4442
Hu	3333	3465	4233	4533	3212	3522
Ap	3455	3255	5335	3333	3233	1224
Pi	4442	2565	6444	4505	4221	0413
Tn	3554	3476	3344	5565	3343	4444
Hr	3444	4557	5345	5555	4233	3544
Wa	4435	2556	5335	6544	3232	4543
To	3445	3555	5336	5544	3334	4444
Am	3446	2344	5135	5444	3243	3434
May	7	8	9	10	11	12
Tr	2323	3245	4001	3232	3213	3456
Co	2235	5211	1114	3111	2256	4334
So	2122	4243	2021	2231	2123	3456
Le	2221	3222	2111	2221	1123	3357
Do	2221	4033	3000	3330	2212	4369
Me	1244	4212	1012	2111	1066	3236
Si	2234	4311	1001	2111	2256	3345
Es	2221	2222	1000	2221	1122	3446
Lo	2222	3332	2111	3231	2223	3447
RS	2121	2332	1110	2231	2222	3446
Ag	2322	3322	1102	2122	3344	3347
Wn	3222	3233	1101	2331	2222	3447
Wi	2332	3233	1101	2331	2233	3447
Ab	2221	2332	0021	2331	1233	3447
Ni	2232	2132	1101	2231	2223	3447
Ma	2221	2232	1000	2221	1222	3446
Sw	2122	2132	0111	2221	1133	3346
Na	2220	2232	1001	2221	1232	3446
CF	3322	2232	1111	2232	2223	3446
Ch	2322	1113	0101	2122	2333	2346
Fu	1122	3232	0121	1221	1223	3346
Eb	--21	2121	0010	1220	2231	2446
TL	1222	2122	0000	1221	1232	3447
SF	---	1121	1133	3332	2243	4458
Tu	2323	3122	1111	1111	2243	2346
Ks	2133	4233	0111	2120	0232	3457
SJ	1201	2010	0001	0110	2022	0345
Te	2222	2323	2111	2221	1232	2456
Ka	1233	3211	1102	2131	2133	2446
Ho	0122	3011	0100	0010	1232	1345
AL	1233	2221	1112	1121	1242	2346
Hu	0112	3310	0001	2321	2222	3454
Ap	2223	3031	2111	1123	1142	2335
Pi	0220	1102	2011	0201	3123	0366
Tn	1133	3233	1132	3232	3243	3447
Hr	1232	1212	0233	2221	2233	3356
Wa	3233	3210	3221	1030	2343	2446
To	3333	4222	2223	3232	2343	3---
Am	2222	3112	2112	1012	2244	3334
					3454	5421
					2235	3222
					3232	1322

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

May	13	14	15	16	17	18
Tr	3211 1134	4522 3145	5522 2245	6634 3335	6545 5555	5523 1225
Co	2122 0121	3333 2223	4333 3233	4555 4423	3466 4533	4332 1222
So	2111 2122	3322 3236	5322 3234	5633 3335	5445 5556	5423 221-
Le	1110 1212	3322 1334	5422 3333	4532 3224	4444 4444	5522 2222
Do	1002 0112	2322 0235	5423 3323	5523 3323	5444 5435	5423 3323
Me	2123 0002	3334 2224	5322 2224	4554 3323	3555 5334	5433 2223
Si	2223 0111	3323 2333	4332 2333	4554 2333	3557 6333	4422 2222
Es	1011 2213	3322 0334	4322 3332	4423 2332	3433 3443	4323 2322
Lo	2211 2122	3322 1334	4323 3333	5423 3333	4425 5444	4423 3322
RS	1121 1122	3322 1334	4322 3333	5423 3232	4434 4434	4423 2322
Ag	1223 1122	3432 2345	6333 3344	4443 2333	4645 4345	5523 2333
Wn	2111 1123	3433 1344	4433 4333	5423 3333	4433 4434	4433 2323
Wi	1122 2223	4433 1345	4333 4434	5434 3333	4443 4534	4434 2333
Ab	1122 1223	3323 1344	4323 3433	4423 3333	4433 4443	4324 3323
Ni	2121 1223	3322 1234	4323 3343	5423 2233	4423 4443	4423 2323
Ma	1111 2111	3322 1334	3322 3333	4423 2323	4432 3433	3313 2323
Sw	1111 1122	2222 2234	3322 3232	4333 2222	3322 3433	3323 1322
Na	1111 1112	3321 1334	4333 3332	3433 2323	4423 3433	3333 2222
CF	2122 1122	3432 1334	4333 3333	4433 3323	4433 3433	3433 3322
Ch	1122 0112	2432 0245	5333 3233	4433 2223	4444 3334	5523 1233
Fu	1222 2223	3323 2234	4333 3333	4333 2232	3442 3333	3324 4322
Eb	1100 0123	3321 1234	4323 3222	3323 2233	4422 2223	3223 2222
TL	1011 1023	3322 0234	5333 3333	3523 3223	4433 3333	3324 3223
SF	1124 2333	3323 2145	4325 3433	4524 4233	5433 2334	4325 4333
Tu	3222 1112	3432 1344	4332 2222	3343 2323	4444 4323	4533 2333
Ks	0121 1023	3233 0245	3334 4332	2534 4333	4534 3434	4333 4313
SJ	1001 0012	3321 0133	4323 1222	3212 2122	3422 2121	4322 0201
Te	2112 1223	3332 0244	4332 1333	3233 2343	3433 2243	3322 2323
Ka	2112 1122	3231 1224	3432 2233	3233 3233	3224 4332	4533 1222
Ho	1011 0002	2122 0023	3221 2211	1231 1112	2234 3221	3322 1211
AL	1111 0112	2121 1224	2432 2222	2233 1122	2223 3433	4433 2212
Hu	0001 1222	2221 1243	3322 4331	3213 3322	2312 4432	3323 3431
Ap	2021 0013	3322 1133	232- ----	-333 2122	4234 2334	2521 011-
Pi	1002 2202	2331 0323	5313 2422	4322 0123	3421 1243	5424 0312
Tn	2233 1113	3343 2333	2343 4333	3444 3333	4443 3434	4333 3323
Hr	0022 1012	2233 3334	4332 3213	4433 3223	4333 3334	4433 3202
Wa	2112 0001	3321 0123	4322 2222	4323 3332	3325 4423	4421 0101
To	3322 1223	3432 1233	4332 3233	3434 4333	4335 4433	3432 2222
Am	2012 0010	2222 0132	3220 3122	3333 3223	3344 3322	4421 0022
May	19	20	21	22	23	24
Tr	4322 3224	3422 2233	2102 2244	3312 4423	4315 5376	5323 4434
Co	2322 2112	2224 5221	2102 3211	3202 3411	1223 2253	3324 3322
So	--22 3222	2232 2132	1111 2132	2111 3321	3224 5366	6222 --35
Le	3221 3222	2221 2222	1111 2122	2212 3322	3223 3364	5322 3423
Do	3332 3212	1210 1010	0000 0012	3000 3210	3323 3375	6322 3423
Me	2432 2122	1223 3121	2110 1121	3211 2211	2326 6343	4445 3322
Si	3431 2212	2213 3011	2211 2110	3211 1211	2225 6353	4224 3322
Es	2212 3222	2321 2121	0022 1112	2202 3321	2213 3455	3322 3432
Lo	3232 4221	2313 2222	1122 1122	2212 3321	3324 4465	4223 3422
RS	3322 3221	2212 1211	1101 1121	3201 3311	3323 3355	4322 3422
Ag	3322 3333	3222 2232	1112 2222	3211 3322	2325 4454	4433 3343
Wn	3332 3222	2321 2122	1111 1122	3111 3221	3223 4465	5223 3533
Wi	3332 4222	2211 2121	1111 1123	3112 3222	3334 4465	4333 3533
Ab	3222 4223	2222 2222	1212 1112	3211 3221	3224 4355	4323 3433
Ni	3322 3222	2221 2222	1111 1121	3100 3222	4223 4365	4322 3433
Ma	3332 3222	2111 1021	1100 0012	2000 3210	2113 4455	4222 3422
Sw	3222 3121	1222 2111	1222 1121	2222 2211	3223 3354	4222 3422
Na	3322 3222	2221 2121	1110 1112	2100 2221	2223 3355	4322 2423
CF	3322 3222	2321 1112	1121 1122	3112 3211	3223 3355	4223 2423
Ch	3221 1123	2221 2022	2100 0001	3101 2323	2224 2254	4323 3333
Fu	3233 4222	2322 3221	1123 3122	3213 3210	2234 3355	4223 2422
Eb	2220 1112	2210 0011	0000 0012	2100 2210	2122 3355	3212 2322
TL	3321 2112	2310 1012	0000 1012	2100 3211	3224 3355	3332 3423
SF	333- -222	3334 4332	01-- --2	3223 3310	3-- 4354	4333 3433
Tu	3332 2231	1122 4021	1100 0111	1100 2111	2334 3244	4433 4333
Ks	2122 2101	1022 2120	0110 0012	2100 1110	2133 3364	4322 2433
SJ	2110 0111	1010 0010	0000 0001	2000 1110	1223 3252	3211 2222
Te	2221 3333	2221 2123	2112 1222	2112 3332	2234 4153	3232 3223
Ka	2232 2212	1222 2111	2101 1001	2100 1101	2235 4443	3323 3332
Ho	2221 0121	0111 2000	10-- --00	2000 0101	0025 1232	2111 2212
AL	2222 1111	2212 1111	1111 0011	2111 1211	1235 4352	3222 2222
Hu	2111 3321	1111 2221	0001 1210	2001 2310	2234 5354	2101 3432
Ap	---3	2122	---1	3111 22-2	2125 4332	3322 2221
Pi	3222 1002	2122 0110	1222 0301	2113 0301	2333 3454	3313 2323
Tn	3233 3222	2223 2132	1223 1232	2233 3311	3335 5353	4233 3323
Hr	3333 3011	2232 2111	0022 2202	2112 3310	3324 3243	3323 2322
Wa	2322 1011	2211 2111	1110 0111	3110 1200	1125 4242	4212 3211
To	2332 2222	2222 2222	3222 3222	3311 2322	2335 4333	3333 3323
Am	2322 1002	2222 3001	1010 1111	1100 0200	1124 4233	3222 2212

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

May	25	26	27	28	29	30
Tr	2222 3226	6223 4555	7723 1113	2312 2110	1233 3426	4024 4234
Co	2232 3222	4215 5745	4634 2111	2332 1210	0232 5422	1136 4221
So	2222 3226	5123 4656	8634 2112	1222 2100	1233 3326	3024 4224
Le	2221 2234	4222 3568	6632 2212	2222 2211	1232 3213	2123 4222
Do	1222 3225	5123 4679	8634 2112	2222 2210	0233 3314	3003 4513
Me	1241 2134	3224 4446	5634 2112	2332 2212	1263 5223	2157 4222
Si	2231 2133	3214 4546	4723 2111	2311 2210	1242 4323	1147 4221
Es	1223 3233	3223 4555	5423 2212	2222 2110	1133 3313	1124 4322
Lo	1222 3134	4223 4657	6534 2212	2222 2110	1143 3313	2024 5223
RS	2232 3233	3323 4556	5424 2212	2222 2110	1242 3313	1123 4123
Ag	2232 2244	3223 3556	6723 3122	2222 3220	0152 4233	2045 4222
Wn	2332 2233	3224 4656	5424 3212	2322 2210	1232 4324	1124 5323
Wi	2234 3234	4223 4655	6534 2222	2322 2210	1234 4324	1124 5323
Ab	2233 3333	3323 4555	5423 2222	3322 2210	0143 3324	1134 4323
Ni	2222 3233	3223 4656	5423 2222	2222 2111	1133 3324	1123 4323
Ma	1122 2233	3223 4555	5433 2222	2212 2210	1133 4423	1013 4322
Sw	1222 2233	3223 3545	4433 2111	2222 2111	1232 3213	2123 4222
Na	2231 2234	3223 3545	5433 2212	3222 2210	1232 3324	1123 4223
CF	2332 2233	3223 3545	5433 2212	2322 2210	1232 3324	1223 4223
Ch	2232 2244	3222 3556	4533 1112	2321 2211	1152 2233	2135 3222
Fu	2222 2233	2223 3545	5423 2212	2322 3100	1233 4323	1123 4223
Eb	1121 2123	3123 3445	4422 1121	2222 1210	1232 3323	1113 3321
TL	2222 2133	3223 4556	5432 2212	3332 2200	1133 3313	1023 4222
SF	3222 2034	4333 36-7	6533 1323	3322 2211	0243 --13	0445 4123
Tu	2231 2235	4223 4545	4524 1123	2331 1112	1142 4223	2245 3212
Ks	2122 2143	4213 4656	4434 2111	2143 2210	1122 3334	1034 5312
SJ	1221 1133	3112 2455	5512 0011	1221 1100	0031 1112	0023 2101
Te	2221 3335	4223 3455	4433 3323	2331 2232	1142 2233	3234 2221
Ka	2232 2233	2223 3545	3545 4456	2322 1221	3242 3332	2234 3233
Ho	1121 1122	2122 2455	3323 0000	1321 1110	0122 3111	0134 2110
AL	2322 2123	3222 3555	3233 1111	2332 2210	1133 3323	1234 4212
Hu	1111 2232	3113 4545	5422 2220	1211 2310	0131 3312	0023 5420
Ap	1121 1034	3122 2355	4522 2223	3221 1122	3222 3213	2234 2122
Pi	2223 1225	4304 3655	5533 0002	2332 0200	0142 0203	1232 3103
Tn	2233 2133	3333 3656	4344 2111	2344 2212	1243 4334	1134 4222
Hr	1211 1223	2113 3556	5543 3210	3323 2110	0033 3213	1123 3222
Wa	1231 2123	2113 2645	3423 1100	1320 0100	1243 3212	1123 3112
To	2232 2233	3323 2544	3433 2222	2421 1101	1243 4222	2334 3222
Am	1121 0023	3112 2445	3323 0100	1221 0100	1132 4212	1035 2113
May	31					
Tr	3313 1123					
Co	3322 0122					
So	2213 1112					
Le	2222 2122					
Do	2212 0022					
Me	3223 2123					
Si	3323 1122					
Es	2212 2123					
Lo	2213 2223					
RS	2213 3123					
Ag	2323 2233					
Wn	3313 2133					
Wi	2223 2233					
Ab	2313 3233					
Ni	3213 2133					
Ma	2223 2233					
Sw	2213 2123					
Na	2323 1233					
CF	3322 2123					
Ch	2323 1244					
Fu	2223 3133					
Eb	2213 2233					
TL	2323 3133					
SF	1313 3133					
Tu	2234 3133					
Ks	1125 3134					
SJ	1113 1033					
Te	2224 1123					
Ka	3213 3233					
Ho	0213 1023					
AL	1314 2233					
Hu	2213 2233					
Ap	3313 2123					
Pi	2224 2003					
Tn	1224 3233					
Hr	1114 3222					
Wa	3213 1122					
To	2213 2123					
Am	2312 1023					

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

June	1	2	3	4	5	6
Tr	2223 4544	4544 5456	6212 4233	3212 3445	3222 3433	4344 4443
Co	2225 5533	3454 6333	2434 5111	2233 2511	2311 1222	2455 4422
So	2223 4533	3333 5455	6112 3122	2112 3434	3222 3323	3244 4443
Le	1222 3332	2432 3334	4222 3211	1111 3323	2221 2222	2244 3332
Do	2232 4433	1442 4344	5201 3101	2221 2323	3321 3323	3354 4322
Me	3435 4433	2575 5334	4443 4112	2253 2223	3231 2322	2466 6322
Si	3435 3443	2564 5333	3333 4112	2242 2321	2321 2222	2365 5321
Es	2222 4432	2322 3433	4222 3211	1112 4323	3221 2322	2354 4321
Lo	2223 4432	2424 4443	4222 3011	1111 4313	2321 3323	3355 4331
RS	2332 4433	2333 3343	4112 3111	1221 3323	3321 2323	3355 4322
Ag	3543 3444	2443 3344	4322 3222	2242 2322	4232 2333	2464 3332
Wn	3332 4443	2323 4444	5222 4122	2122 4323	3322 3323	3355 5432
Wi	2333 4543	2334 4444	5322 4122	2222 4324	3322 3433	3355 5432
Ab	3332 4443	1323 3443	4222 3222	1123 3333	3322 3332	2355 4321
Ni	2322 4443	2323 3344	4211 3112	2111 4323	3312 3333	3355 5322
Ma	2222 4443	2323 3433	4211 3122	1111 4323	3312 2321	2455 5332
Sw	2222 3332	1323 3243	4221 3111	1222 3323	2312 2323	2345 4322
Na	2332 3443	2322 3333	4211 2111	1111 3323	3321 2322	2344 4322
CF	3332 3433	2333 3343	4321 3122	2222 3323	3322 2323	2354 4322
Ch	3442 3444	2443 3354	4222 2122	2332 2223	3332 2233	3353 3332
Fu	2232 4432	1323 3333	4212 3212	1222 3323	3222 3322	2345 4321
Eb	2222 4443	2322 3333	5111 3111	1100 2324	3321 2322	2355 5321
TL	3332 4443	2323 3343	4211 2122	1121 2323	3311 3322	2344 4322
SF	13— 2154	1223 3343	5324 3212	0233 2433	3322 3322	1255 4332
Tu	3433 3333	2453 3333	5322 3121	2232 2322	3321 2222	2354 4222
Ks	3345 5454	2344 3344	5333 4122	2221 3333	4421 2222	2345 4322
SJ	3323 3333	2332 2233	3211 2111	2211 1112	3322 1222	2253 2222
Te	3433 3452	3452 3333	4321 3232	2131 1223	3321 3342	3243 3323
Ka	3333 3333	2444 5343	3222 3122	2132 2322	2322 1333	3364 3322
Ho	3323 3332	3423 3232	3221 3111	1121 1121	2210 0121	1254 3212
AL	3234 4321	1334 4232	4221 2111	1111 2222	3311 1222	1354 3211
Hu	2332 4433	3343 3542	3211 2221	1121 3321	3211 2331	1234 4421
Ap	3323 3233	3454 4234	4222 3022	2121 1223	2220 1222	2254 3222
Pi	2320 4333	3240 2333	4310 2031	2221 2302	3213 2142	2341 3212
Tn	3334 4444	2335 5443	5332 3221	1333 4433	3322 2233	3345 4432
Hr	2223 3244	1424 3333	5222 3232	0223 3313	3333 3122	2235 4311
Wa	3223 3332	2334 4343	5332 4111	1121 1413	2210 0211	2254 3210
To	3334 3433	3334 5443	4332 4222	2232 2423	3222 2323	2354 4232
Am	2323 3222	3443 4332	4332 4011	1232 0313	2210 0113	2353 4212
June	7	8	9	10	11	12
Tr	4531 4325	6632 4455	6523 3300	1014 3234	4313 3444	5324 3254
Co	3441 6122	3443 3532	3324 4300	1003 4211	2224 3522	4344 4312
So	3432 4314	6622 4554	5423 4401	1014 3222	3213 2345	5333 3254
Le	2421 3223	3532 3442	4412 4411	1112 3221	2212 2432	4222 2232
Do	2431 3303	5532 4444	5522 4500	0003 4221	3222 3433	5333 3243
Me	3543 4223	3552 3333	4434 3211	1013 3212	1223 2333	5355 4222
Si	3532 5212	3442 3332	4323 2201	1002 3221	2223 2333	4344 4322
Es	2322 4222	2422 4423	3212 4410	1102 3321	2212 3432	3232 2333
Lo	2322 3323	3422 4433	4323 4401	1113 4221	3323 3433	3223 3242
RS	2332 3222	3422 4424	4222 4400	1002 4321	2222 3433	4232 3243
Ag	4432 3223	4442 3333	4323 2212	1012 3322	2322 2344	5344 3233
Wn	3322 4222	3422 4533	4222 4501	1103 4332	3323 3433	4323 3343
Wi	3443 4332	3423 4533	4333 5501	1123 4332	2333 3533	4333 3343
Ab	2332 4232	3322 4533	4223 4501	0013 4331	3323 3433	3333 3333
Ni	3332 3222	3422 4433	4222 4411	1002 4332	2233 2432	4222 3343
Ma	3322 4222	2322 4433	3323 5401	0012 3322	3322 2432	2322 3332
Sw	2322 3222	3322 3322	3222 3411	1022 3221	2323 2423	3222 3232
Na	3322 3222	3422 3433	4222 3401	1002 3322	2222 2332	3222 2332
CF	3432 3222	3432 3433	4222 4401	1112 3322	3322 2333	4332 2342
Ch	4432 2233	4442 3333	4313 2212	1113 2222	2312 2334	5233 2233
Fu	2222 3112	3322 3432	4222 3400	1212 3321	2321 3342	3222 3342
Eb	3321 3111	2322 3432	3212 3300	1002 3220	3301 3332	3221 1232
TL	3332 4222	3332 3433	3322 2401	1102 3322	3312 3343	3334 4332
SF	2333 4122	3312 3543	4323 1501	1213 4422	3322 3433	3242 1231
Tu	3422 2123	3432 2322	3313 2201	1012 2211	1222 2334	4343 2213
Ks	2421 4223	3322 2333	2223 3400	0023 3332	2212 1243	3333 2233
SJ	3321 2112	3332 1221	2201 1211	0002 3231	1211 2233	3122 1132
Te	2421 2333	3332 2323	3212 2221	1112 3333	2222 2224	3222 2334
Ka	3432 3223	2232 2322	4432 3311	2213 3220	2223 2333	2353 2122
Ho	2321 3112	3311 1112	4112 1101	1002 2210	1212 1122	1332 1111
AL	2423 3122	2232 2332	2112 3201	1113 3221	1122 1232	3243 2132
Hu	2310 3321	3321 4432	2200 3430	0001 3320	1211 2432	3222 3322
Ap	2422 3212	3331 2—3	3322 2212	3202 2122	0322 1223	3342 3222
Pi	3421 3212	3330 2423	3300 3201	1112 3421	1221 2234	4222 1333
Tn	2332 4222	3333 3543	2243 3311	1123 3322	2334 3343	3253 4233
Hr	1323 3202	2333 3433	3302 3311	2213 3322	3322 3132	3243 2232
Wa	1311 4101	3321 1222	3232 3300	1122 2111	1312 1332	2133 3233
To	3332 4112	4432 2323	4333 3312	2323 3222	2323 2333	3343 3223
Am	2331 3111	3331 1322	3223 2302	1001 2111	2323 1122	2243 2112

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

June	13	14	15	16	17	18
Tr	3133 5334	2102 1456	6444 5564	5325 4434	4221 1446	7654 4333
Co	2234 5121	2101 0343	4443 5633	4336 4532	2011 0344	4654 3322
So	2233 5223	2112 2356	5344 5464	5324 3435	3222 2447	8754 4322
Le	2232 4122	0101 2455	4343 5432	4222 3333	2112 0439	9754 2322
Do	2233 4223	0101 0457	5333 6553	5223 4433	3220 0449	9854 4433
Me	3234 4122	1101 1145	4454 5433	5345 4323	3002 0337	6764 3333
Si	3233 4211	1101 0355	4342 5444	4345 3332	3211 1335	6865 3322
Es	2233 3222	0102 2554	4333 4433	3222 3433	2122 0549	8553 3433
Lo	2233 4233	1202 2455	4333 5433	3224 4333	2222 2539	8754 4423
RS	2233 4223	1101 1554	4343 5433	3223 4333	2221 0548	7654 4423
Ag	3133 4333	1202 2356	3553 3444	5243 3343	3121 1447	8855 3334
Wn	2233 4223	1202 1565	4333 5443	3233 4433	3321 1547	7554 4534
Wi	3344 4323	2222 2555	4334 5443	4333 4433	3331 2557	7554 4524
Ab	3233 4223	1113 1554	4333 4433	3233 3333	2222 1546	5454 3424
Ni	2233 4223	1202 1554	4333 4333	4233 3343	3211 1547	6453 3423
Ma	2123 4222	1101 0444	3323 4333	2223 3433	2211 1546	5453 4423
Sw	2233 3222	1212 1454	3323 3332	3223 3322	222- 2435	5453 3413
Na	2232 3222	1101 0454	3332 3333	4222 2333	2221 0445	5452 3323
CF	2333 3223	1212 1455	4333 3333	4333 2333	3321 1445	5454 3323
Ch	2333 3223	1200 1356	4443 3544	4243 3332	3111 2446	6754 2324
Fu	2133 4222	0213 2454	3333 3333	3223 3333	2212 1436	5454 3423
Eb	2232 3112	0000 0454	3332 3333	3211 2332	1110 0455	5552 3314
TL	3233 3112	1001 0454	4333 3433	4232 2332	2221 0445	5554 3323
SF	3122 3211	0102 3565	2244 4434	3231 3332	3213 2546	6555 3424
Tu	3233 2122	1100 0346	4342 4344	3343 1233	3111 2446	5763 3324
Ks	3133 4123	1102 0555	3233 3342	3232 2333	1010 0537	6365 4524
SJ	3022 2212	0000 0354	3122 3223	4231 1233	3100 0426	5552 4324
Te	3132 2223	1110 1446	4232 4253	3243 1342	3110 1537	4653 3333
Ka	2253 4122	2202 2445	3443 3333	3233 3222	3211 1545	4455 4433
Ho	3122 2011	0000 0234	2232 2143	3213 2211	1100 0436	5453 3323
AL	4364 3122	1121 0444	4443 3323	3323 2322	1111 1536	5563 4413
Hu	2012 3111	0000 1453	3121 3431	3222 3431	2001 1546	5443 4523
Ap	3032 2211	2100 02--	-----	-----	2020 0436	5554 32--
Pi	3001 4132	0000 2455	4132 3042	4232 2222	3100 1447	5553 5443
Tn	3254 4233	1112 0444	4444 3443	4443 3333	2222 2537	66-- --
Hr	3044 3222	0122 2243	3333 3333	4233 1232	3212 1436	5556 3313
Wa	2232 3111	1101 1335	3332 4332	3333 3321	1110 1335	6354 3313
To	3322 3212	3211 0345	3242 4333	4334 3222	2201 1435	6455 3323
Am	2133 3112	2000 0235	3332 3333	3134 2121	1000 0326	5554 2224
June	19	20	21	22	23	24
Tr	4644 4533	3212 2015	3221 3423	4213 4344	5411 2123	2113 2233
Co	4566 4533	3111 1112	3341 3422	2224 4322	3221 1111	2114 4022
So	4644 5623	3112 2115	2222 3313	3113 3344	4321 2112	1113 2223
Le	3644 3522	3112 1114	1232 3222	2112 3222	3221 1212	1112 2122
Do	3754 4522	4212 2004	2232 4212	2222 3222	4300 1012	1213 3023
Me	4667 4332	3111 2113	3351 3322	2225 3222	3331 1221	2113 3113
Si	4688 4432	3211 1213	3350 3322	3223 3222	2230 1111	2113 3122
Es	3543 3521	3112 2113	1233 3322	2122 3322	3121 1222	1113 2222
Lo	3644 3522	3222 2113	2233 4312	3223 3323	3221 2212	2213 3223
RS	3533 3522	3112 1113	3233 3312	2222 3322	3221 2212	2213 2223
Ag	3886 3533	5223 3214	2352 2323	2113 3333	3322 2322	2213 3233
Wn	3543 3632	3213 2114	2232 4322	2322 3333	4211 1222	2213 3233
Wi	3544 3632	3222 2214	2344 3312	3223 4333	4211 1222	2223 3233
Ab	3544 3531	3112 2114	2334 3312	2223 3332	3231 2222	2123 3233
Ni	3533 3532	3212 2114	2232 3312	2213 3233	3131 1123	2213 3133
Ma	3543 3522	3212 2213	2232 3312	2112 2223	3221 1121	2212 2222
Sw	3533 3532	3222 2113	2221 3211	1123 2122	3132 1112	1122 2122
Na	3543 2522	3212 2213	2231 3312	2211 2222	3311 1112	1212 2122
CF	3443 2522	3312 1214	2231 3312	2332 3322	3321 2222	2212 2223
Ch	3655 2333	4101 2114	2341 2313	2213 2123	3221 1123	1212 2123
Fu	3433 3522	3112 3213	2232 3221	2222 3322	3232 3012	2222 2222
Eb	3543 3422	2112 2103	123- -	---0 1122	3200 0100	0002 2121
TL	3544 3421	3102 2213	2332 2322	2212 2222	3211 1222	2112 2222
SF	4253 3531	3203 3214	2331 2322	2313 3332	3132 2322	3133 2232
Tu	4655 3322	3121 2113	2351 2322	2223 2112	2321 1101	1213 3023
Ks	3544 3533	2111 1004	2243 3322	2123 3223	2221 1000	1002 1010
SJ	2634 1221	3001 1103	2241 2222	1211 2212	2100 1111	1111 1022
Te	3544 2432	3122 2324	2341 2223	2222 2332	2221 2423	2212 1224
Ka	3545 3323	3222 2113	3332 2322	3233 2222	2222 1132	2223 2134
Ho	3635 0212	2111 1123	1230 1121	1112 0011	1110 0010	1002 1011
AL	2433 1421	2112 1113	2342 2211	1322 2222	2222 1111	1212 2122
Hu	3533 2431	2002 2212	2231 3321	1112 2221	1001 2111	1002 2121
Ap	-----	3211 0013	2331 2222	0102 1023	4210 0022	2012 1122
Pi	3543 3211	2212 2213	2342 3111	0123 2012	3221 2200	1102 2021
Tn	-----	-----	-----	-----	-----	-----
Hr	2355 3322	3123 1113	2222 2201	0213 3211	3233 3221	1123 3031
Wa	3544 2511	2221 1103	2141 2311	1223 2112	1221 0111	1211 1112
To	3546 3433	3222 1123	3342 2422	3223 2223	3222 1122	2222 2122
Am	2446 2323	2100 0002	2240 1311	2102 2112	2010 0002	2002 1022

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

June	25	26	27	28	29	30
Tr	4334 5654	4333 3233	3322 3332	4232 2244	4212 3344	4333 2243
Co	2455 5643	2454 2232	3350 5323	2334 4423	3203 4222	3442 2111
So	2334 5665	4323 3232	2222 3422	4232 3234	3122 3233	3323 2242
Le	2333 5556	3332 2222	2231 2412	2222 2213	2212 3233	2233 2231
Do	3344 6757	4333 3322	2222 3512	3233 3213	3212 3333	3333 3332
Me	3567 6533	3564 3232	3551 3323	3343 3323	3312 4223	3333 4322
Si	3456 5643	3453 3232	3551 3323	3333 3323	3302 3333	3333 2222
Es	2343 5444	3332 2222	2232 2523	2223 3223	2211 3332	2233 3231
Lo	3334 6544	3323 2222	2232 3523	3333 3223	2223 4342	3334 3232
RS	2433 6543	3332 2222	2233 2533	3333 4223	2221 3332	2333 3231
Ag	4565 5544	3443 3343	3352 3433	2433 3234	2312 3343	2432 2232
Wn	3434 6543	3323 3232	2332 3533	3233 4323	3212 4333	3223 3341
Wi	3444 6544	3433 3232	2343 3533	3333 4333	3322 4343	3333 3342
Ab	2444 5544	3333 3232	2332 2523	3333 3323	3222 3342	3333 3331
Ni	3434 5543	3323 3222	2331 2523	3232 3223	2222 4333	3223 2331
Ma	2434 5543	3322 3222	2232 2533	3232 3323	3222 4343	3223 2222
Sw	2333 4433	3322 2222	2222 2422	3222 3223	2221 3232	2223 2131
Na	2333 5443	3222 2222	2321 2423	3332 3223	3222 3332	2232 2232
CF	2433 5543	3332 3222	2322 2423	3232 3223	3321 3333	2222 2232
Ch	4454 5453	3342 2342	2241 2334	3333 2234	3211 2343	3421 2232
Fu	2333 5443	3333 2121	2232 3423	3223 3222	2222 4332	3233 3232
Eb	1433 443—	— 2121	2230 1423	3221 —22	2311 3332	3122 2231
TL	2334 5544	4333 3221	2332 1423	3333 3323	3222 4242	3232 2231
ST	2433 5555	4333 3321	1243 2423	4333 3233	4322 3243	3232 2231
Tu	3454 4452	3542 2232	2352 2423	2343 2124	3312 3234	3432 2222
Ks	2433 4534	4322 1022	1143 2423	3444 4333	3212 2232	3123 1240
SJ	3343 3343	3332 1121	2240 1322	2332 2323	3211 1143	2422 1111
Te	2453 3353	3332 3231	2352 3334	2343 3333	3312 3243	2322 1222
Ka	4335 4323	3323 3222	2242 2422	3343 3233	3312 2233	2332 2121
Ho	2333 3322	2321 1121	2231 2322	2322 2233	2102 1121	1222 1021
AL	3434 4533	4422 2222	2342 2322	2333 3222	2323 3232	2222 2231
Hu	2333 5642	2221 2231	2341 2522	1222 3223	2201 3331	2322 3320
Ap	3233 3333	3432 2223	2341 2313	2232 2223	4211 2232	2332 1022
Pi	3333 4353	3332 2011	2350 2323	1432 3023	3302 1043	2422 0132
Tn	----	----	----	----	----	----
Hr	1324 4443	3324 3221	1233 2222	3233 3123	2223 3241	2223 2230
Va	2334 5433	4312 2211	2331 2212	2122 2311	2211 2221	1331 1131
To	2444 4543	3433 3322	2342 3333	2333 3332	2222 3233	3333 3132
Am	3344 3333	2332 2122	1240 3232	2331 3212	2111 3112	3332 1022

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

July	1	2	3	4	5	6
Tr	5302	5766	7564	4534	5543	5446
Co	3105	5544	5667	5443	4426	6443
So	5313	5667	7774	4456	5343	5356
Le	4312	3359	9874	3434	4332	4444
Do	4102	3469	9984	4535	5333	5445
Me	3213	4325	6655	4434	4446	6344
Si	3113	4444	7878	7444	4435	5444
Es	3212	2356	7854	3443	3333	4443
Lo	3213	3559	9755	4544	4333	4434
RS	3223	2457	7664	3444	4333	4434
Ag	4213	2247	8997	4445	4544	4445
Wn	3113	3557	6755	4544	4333	4444
Wl	3223	3465	6765	4544	4434	5454
Ab	3223	3355	6655	3544	3433	4443
Ni	3113	2455	6655	4444	4333	4344
Ma	3113	3555	6644	4534	3334	4434
Sw	3113	2445	6545	3333	2322	2333
Na	3112	2445	6644	3434	3333	3444
CF	3112	2445	6654	3444	3332	2333
Ch	4212	2336	7765	3435	4443	5445
Fu	3223	3345	6545	3444	2232	4333
Eb	4001	3445	5645	4534	3224	4443
TL	4013	4345	6656	3534	3333	4444
SF	4213	4456	6555	3545	3233	4554
Tu	3312	2326	6765	4434	4534	3444
Ks	3003	2353	2334	3344	5224	5444
SJ	3312	1226	6654	2334	3422	1433
Te	2311	3246	5665	2443	2433	2434
Ka	2223	3346	5666	3434	3334	4234
Ho	2000	0125	6665	3223	3324	3323
AL	2113	2335	5455	4422	2324	3333
Hu	3211	3336	5653	3443	2321	4443
Ap	2311	3225	6565	4423	2324	3223
Pi	3301	3247	6654	5343	3423	4333
Tn	-----	-----	-----	-----	-----	-----
Hr	3133	3445	5555	3234	3334	4434
Wa	3113	3335	5555	4322	2323	4334
To	3223	3345	4565	4333	3335	4343
Am	3112	3234	4566	4323	3334	3333
July	7	8	9	10	11	12
Tr	4222	2355	4211	2145	5622	3343
Co	2221	1212	3211	0122	4432	2322
So	2122	2344	3121	1236	5522	2322
Le	2112	2323	2112	1224	4422	3442
Do	1122	1333	2122	2225	5423	3431
Me	2221	1213	3112	1223	4422	2332
Si	2321	1223	3212	0223	4431	2333
Es	1112	2323	2112	2333	3312	3442
Lo	2212	3433	2113	1333	4422	3442
RS	1122	2323	2112	1333	3422	3442
Ag	2222	2434	3312	2333	4322	3443
Wn	1222	2433	3211	2334	4433	3542
Wl	2222	2433	3212	2334	4433	3543
Ab	2122	2323	3223	2333	3422	3542
Ni	1121	2323	3111	1333	3433	3442
Ma	2211	3323	21--	--23	3323	3442
Sw	1222	1323	2112	1213	3322	2332
Na	1221	2323	3210	1323	3332	2432
CF	2321	1323	3321	2333	3432	3432
Ch	2221	1334	3311	1234	4422	3343
Fu	1133	2313	2212	2323	3322	2332
Eb	1121	1322	2--0	-----	--2	2332
TL	1121	2223	2211	2333	3322	2442
SF	1021	1323	3212	2333	3423	3343
Tu	2221	2324	3221	1223	4421	2342
Ks	1021	1223	3100	0123	2422	2443
SJ	1221	1222	3211	1121	3221	1232
Te	2221	2334	3221	1233	4321	3333
Ka	2321	2222	2222	1123	3331	2222
Ho	1211	0021	3110	0112	3311	1222
AL	1111	1222	1211	1123	2322	2232
Hu	1110	2322	2210	2321	3212	3441
Ap	2121	1132	3302	1022	230--	--2
Pi	1200	1303	3222	3033	4322	2231
Tn	-----	-----	-----	-----	-----	-----
Hr	1223	2323	2113	3232	3323	2232
Wa	2110	0113	3221	0022	3221	0210
To	2222	2323	3322	2123	3422	2322
Am	2111	0122	1102	1012	3301	1111

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

July	13	14	15	16	17	18
Tr	6222	2122	3112	3214	4311	2346
Co	2321	1111	2212	2211	2212	4124
So	5222	2111	2112	3113	4122	2256
Le	4212	1211	1122	2113	2111	2325
Do	5233	1110	1112	3103	3110	2327
Me	3221	1022	2113	1113	3222	4234
Si	3222	1112	2222	2122	2221	2335
Es	3212	2221	2122	2212	2111	2334
Lo	3323	2211	2223	3212	2112	3336
RS	3322	2121	1222	2111	2121	2335
Ag	3222	2223	2212	2323	2131	3345
Wn	3323	2222	2221	3222	3222	3336
Wi	3323	1222	2222	2223	2223	3435
Ab	3322	1222	2123	2323	2122	2435
Ni	3323	2222	2221	2222	2221	2335
Ma	3212	2222	2122	2112	2211	2335
Sw	3322	2212	1222	2222	2112	2225
Na	3222	1222	2112	2222	2110	2334
CF	3322	1222	2222	2212	3221	2335
Ch	3212	1123	2122	1133	2132	2336
Fu	3322	1111	2133	2212	2122	2325
Eb	3312	1112	2101	1113	2120	1324
TL	3323	2222	2111	0223	3221	2334
SF	3413	2112	2232	2334	3233	3444
Tu	2221	1112	2122	1123	2232	3324
Ks	1021	0001	1012	1002	2220	1444
SJ	3200	1121	1111	1112	1132	1325
Te	3221	1313	3122	2324	2232	3445
Ka	1222	1111	2122	2121	0121	2234
Ho	2111	0001	1012	0001	0101	2233
AL	1212	1111	1212	1212	1111	2334
Hu	2101	1210	1011	2211	1120	2434
Ap	--21	21--	-122	0121	1131	3234
Pi	3212	2221	1211	2033	1220	2335
Tn	-----	-----	-----	-----	-----	-----
Hr	2232	3221	1123	1112	3023	2335
Wa	2211	1110	1202	0101	0121	2235
To	2332	2122	2223	2122	2222	3344
Am	3221	1001	2112	1001	1121	3223
July	19	20	21	22	23	24
Tr	3322	2454	5512	3242	2222	2323
Co	1235	1321	3336	5311	2144	4400
So	3223	3354	3323	3312	2222	2221
Le	1221	2331	3321	3321	2223	2321
Do	0223	2332	3312	3311	2222	2201
Me	2246	2222	2343	3122	3325	3311
Si	1135	2221	3333	4112	3342	3310
Es	1222	2331	3322	3312	3221	2221
Lo	1223	3332	3322	4311	3222	2322
RS	1222	3321	3332	3311	3222	2211
Ag	3345	3231	3332	2322	4342	2221
Wn	2233	3332	3322	4322	3232	2322
Wi	3334	3432	3322	4322	3333	2321
Ab	1233	3331	3323	3312	3232	2321
Ni	2223	2332	3322	2312	3232	2321
Ma	2223	2331	3222	2212	2222	1321
Sw	1122	1221	2222	2311	1222	1311
Na	2222	2331	2222	2211	2232	2211
CF	2333	2332	3322	2212	3232	2211
Ch	3244	2333	3332	2223	4343	1121
Fu	2224	2332	3332	2211	2221	3210
Eb	1123	1331	2212	2211	2132	1211
TL	1234	2331	2323	2221	2233	1211
SF	2234	2342	3323	1212	1232	1222
Tu	2244	2211	3232	3222	3342	2111
Ks	1033	2212	1201	1000	1022	1100
SJ	2233	1212	2232	1111	3332	1111
Te	3233	2323	3231	2443	3331	2342
Ka	2334	1223	2222	2112	2232	3311
Ho	1133	1111	3122	2111	2122	1021
AL	2223	2211	2323	1111	1222	1221
Hu	1121	2431	2220	2310	3321	1220
Ap	2233	2233	4232	2102	3322	2122
Pi	3221	3412	3230	3001	3330	3111
Tn	-----	-----	-----	-----	-----	-----
Hr	2123	3331	2333	3110	2223	2100
Wa	2323	0110	2222	1110	1331	3201
To	2333	2332	3234	3222	3233	3311
Am	1133	2212	3123	3111	2232	2201

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

July	25	26	27	28	29	30
Tr	1223 4445	5454 4656	6522 3356	5644 4564	4433 3345	5223 3445
Co	1245 3322	2566 5722	4444 2222	4447 4554	3354 5412	2125 4232
So	1223 4455	5444 5657	6433 3335	5435 4565	5333 3335	4223 3355
Le	1122 3333	3443 4525	4433 2324	4533 3544	3322 3323	3223 3334
Do	0123 4344	3443 4726	6433 2334	4534 3454	3433 4331	3223 4344
Me	1265 4333	3565 5534	4365 2223	4456 4633	2566 3222	2325 3223
Si	1254 3222	2567 5523	4454 1223	5457 5433	3454 3222	3314 3222
Es	0122 3432	2443 4424	4233 2323	3533 3543	2322 3331	1223 3343
Lo	1123 3443	3434 4625	4333 2324	4434 4453	3333 3333	2223 4344
RS	0233 3443	3444 4524	4343 2323	5534 3453	2323 3332	2232 3344
Ag	1353 3332	2663 4534	5455 2324	5655 3443	4544 2333	2223 3233
Wn	1223 3443	3444 4524	5333 2323	4534 4553	3333 3332	2223 4344
Wi	1233 3444	3544 4524	5344 2334	4535 4554	3433 3433	2333 4444
Ab	1223 3433	3444 4424	4234 2334	4534 4553	3423 3332	2223 3344
Ni	1222 3343	3344 4524	4221 3323	4535 3453	3322 3322	2213 3344
Ma	0222 3333	3424 4524	4223 3333	4544 4553	3423 3322	2222 3344
Sw	1222 3443	3333 3523	4222 2323	3434 3452	3323 2321	1123 3244
Na	1222 2333	3433 3524	4322 2223	4534 3453	3322 2322	2212 3333
CF	1232 2333	3443 3524	4333 2323	4534 3453	3333 3332	2233 3334
Ch	1242 2333	3453 3434	4445 1324	5654 3344	3444 2223	2223 3233
Fu	0223 2333	3334 3424	4234 2233	3433 3443	3324 3322	2223 3334
Eb	1212 2333	3443 5525	5232 2334	4444 3443	3322 2222	2212 2233
TL	1233 3333	3334 3525	5245 2234	3444 3443	3323 2323	2224 2343
SF	0234 4332	3454 3535	5344 2234	3434 2454	4413 2223	3223 2344
Tu	1343 2222	3454 3435	4444 2234	4455 3433	3544 3233	3323 2333
Ks	1333 3234	3544 3522	5235 2333	3534 2453	2433 2322	2223 2354
SJ	1232 2223	2443 2423	4332 1133	3433 2433	2322 2222	2322 3223
Te	2332 4322	2343 2444	4243 2234	4443 2444	3431 2123	3222 2123
Ka	2333 4322	2454 3423	3344 2223	3344 4333	2324 3222	2223 2223
Ho	1242 2212	3354 3323	3232 1113	4434 2332	2333 2112	1112 1122
Al	1324 2233	2433 2412	2333 2322	3334 2342	2423 2222	3224 2243
Hu	0233 3332	2222 4532	3221 2332	3332 3552	2311 3422	1212 4433
Ap	2333 3233	3544 3223	3323 2212	3434 2222	2343 2221	2112 2222
Pi	1231 4332	2331 3323	4331 2033	4443 3433	2412 2132	3212 3323
Tn	-----	-----	-----	-----	-----	-----
Hr	0235 4332	3443 3434	4334 3222	3424 2553	3324 3232	2223 2334
Wa	0223 2232	3435 4423	3433 3342	3333 2311	3333 2222	2113 2243
To	1333 3332	3445 4433	4343 2323	3444 4333	3344 3332	2223 3333
Am	1233 2133	2455 3323	3334 1112	3334 3233	3344 2111	2213 2122
July	31					
Tr	5535 5656					
Co	3466 5753					
So	4435 6666					
Le	4443 6765					
Do	3443 7856					
Me	4667 6544					
Si	3667 6653					
Es	3433 4555					
Lo	3434 6655					
RS	3343 5544					
Ag	3664 4554					
Wn	4433 5545					
Wi	4444 5555					
Ab	3443 4545					
Ni	3333 4435					
Ma	3343 4435					
Sw	2333 4433					
Na	3433 3444					
CF	4433 4445					
Ch	4554 3454					
Fu	3433 4435					
Eb	4454 5555					
TL	4433 4345					
SF	4333 5455					
Tu	4654 3434					
Ks	4435 5446					
SJ	3443 2333					
Te	4553 3344					
Ka	3333 5432					
Ho	2343 3333					
Al	3424 5344					
Hu	3332 4553					
Ap	-----					
Pi	4542 3513					
Tn	-----					
Hr	3324 4446					
Wa	2333 5445					
To	2444 5444					
Am	3445 5533					

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Aug.	1	2	3	4	5	6
Tr	5313 3457	5633 3335	4213 3024	5522 4446	5412 3343	4121 4433
Co	4325 2533	5544 3211	3324 4212	3312 4422	3322 2322	2110 3622
So	5222 3467	6633 3334	3223 3113	4422 4336	5312 3333	3122 4423
Le	4312 3446	5532 3223	2212 2112	3422 3334	5312 2422	3122 3332
Do	5213 3468	6632 3333	3213 3112	4422 4335	5312 3433	3012 3412
Me	4424 3435	5655 3221	3224 3212	3311 2233	4221 2223	2111 2323
Si	4414 2442	6543 2221	3212 3223	3311 3332	4221 2323	3111 2412
Es	4213 3556	5332 3333	2123 3222	3312 3333	4212 3422	3021 3313
Lo	4223 3456	5433 3333	2223 3222	3322 4333	4322 3422	3022 3313
RS	4223 3556	5432 2333	2223 3222	3322 3333	4221 3422	3011 3312
Ag	4323 2545	6553 3232	3223 3223	4312 3444	4322 2233	4022 4424
Wn	4213 3666	5532 3333	3223 3222	3422 4344	4322 3433	4122 3313
Wi	4223 3666	5532 3344	3223 3222	4422 4344	4322 3423	4022 3323
Ab	4223 3666	5432 3333	2123 3222	3322 4344	4223 3432	3133 3333
Ni	3223 3556	5432 3333	2213 2212	3322 3333	4221 3323	4012 3323
Ma	3223 4656	4422 3333	2212 2222	2312 3344	4222 2433	3011 3213
Sw	3222 2555	4432 2333	2223 2212	3322 3233	4221 2322	3122 2212
Na	3213 3555	3422 2323	2222 2112	3321 3333	4321 2332	3021 2223
CF	3223 2555	4332 2323	3322 3222	3333 3333	4322 3322	3122 3323
Ch	3322 2554	5444 2333	3222 2223	4311 3444	4221 2233	3021 3424
Fu	3223 3555	4433 3223	2223 2222	3313 3333	4223 3322	2022 3222
Eb	4213 3555	4522 3333	2212 2122	3331 3323	4211 2322	3011 3322
TL	3224 3655	4534 3323	2212 2112	3422 3234	4223 3332	3012 3223
SF	4234 3666	6534 3333	3223 2213	4422 3444	5223 3332	3113 4323
Tu	4313 2545	5553 3322	3223 2223	3321 3334	4321 3432	3021 3323
Ks	4324 3675	4633 3333	2123 3222	2311 3234	4321 2332	1023 3333
SJ	3312 2543	4432 1221	3211 1122	3301 3243	3111 1211	2011 2222
Te	4423 2555	5543 3332	3222 3334	3211 2444	3322 3343	3122 2334
Ka	3223 2554	3432 2322	2222 3113	3321 2223	3321 2333	2221 2322
Ho	3213 2544	2332 1112	2123 2212	3311 2232	3211 1222	2011 1312
AL	3323 2553	2432 1322	2213 2112	2211 3222	2431 1222	1111 3311
Hu	3312 3664	4332 3421	3112 3221	2200 4443	3110 3431	1000 3432
Ap	4323 2545	3433 1123	3223 2122	4200 2233	4312 1223	2020 2322
Pi	3433 2555	4532 2203	4110 2022	3311 3143	3322 2222	2002 3403
Tn	-----	-----	-----	-----	-----	-----
Hr	3334 4544	5533 3313	3213 3112	4313 3233	3232 2213	3123 3312
Wa	4313 1445	4532 0322	2233 3101	3320 2323	3322 1232	3232 2412
To	4214 2534	5533 2332	3333 3222	4312 3323	4322 2333	3321 3422
Am	3214 1534	4433 2221	3223 3112	3311 3323	3311 2213	2210 1421
Aug.	7	8	9	10	11	12
Tr	3313 2345	4312 2023	4123 4324	3233 4125	3223 5454	5334 5456
Co	3325 1222	2211 0122	0345 4221	1234 5111	1245 5322	3355 4533
So	2223 2345	2122 2112	3123 3324	2222 3123	2223 5455	5324 5366
Le	1312 2324	2222 2112	2112 3323	1122 3223	2222 3334	4332 3343
Do	0323 2335	2211 2111	2122 4324	1223 3123	1223 4335	5333 4445
Me	2334 2223	3331 1212	2245 3113	1234 4212	2356 5223	4355 5433
Si	2414 2222	2221 1111	1244 2122	0233 4111	1244 4223	4344 4333
Es	1312 2323	2222 2122	2112 3323	1122 3223	2222 3333	3232 4334
Lo	1313 2334	2212 2222	2222 4324	2223 3233	2223 4444	4233 4344
RS	1322 2334	2221 2122	1222 3323	2222 3223	2223 4333	3333 4334
Ag	2323 2333	2331 3223	2343 3233	2133 3233	2344 3335	5444 3333
Wn	1323 2234	3322 2223	2123 4334	2322 3233	3323 4444	3333 4344
Wi	1323 2334	2222 2233	2123 4334	2233 4223	3324 4333	4333 4344
Ab	1323 2333	2223 2223	2223 3333	2222 3323	2233 4333	3333 3334
Ni	1313 2234	2212 1223	2122 3324	2232 3233	2223 4333	3323 3344
Ma	1313 2223	2212 1122	1112 3333	2123 3222	2213 4333	3233 4334
Sw	1322 1133	2211 2112	1122 3223	1322 2123	2222 3233	3333 3233
Na	1322 2223	2221 2223	1223 3323	1222 3222	2312 3333	3332 3333
CF	1323 2234	2222 2222	2223 3323	1323 3223	2333 3333	3333 3334
Ch	2323 2233	2321 1123	1233 3233	1232 3233	3344 3335	4434 3233
Fu	1323 3233	2222 3222	2123 3323	2223 3222	2223 4233	3223 3344
Eb	1323 1123	1221 1123	2223 3333	2223 3222	2211 3333	3233 2233
TL	1323 1133	2211 2123	1123 3333	1123 3222	3322 3333	3332 3233
SF	2333 0233	2321 22--	-----	1233 3123	3333 3433	3333 3334
Tu	3333 1223	2331 1211	1233 3323	2233 3123	3333 3324	3344 3333
Ks	2333 2233	2222 1223	1023 3332	2022 3112	2023 4343	3233 2223
SJ	1322 0122	2322 1112	0122 3223	1132 2012	3333 2233	3233 2123
Te	3322 2233	2321 2343	2233 2133	2231 2332	3232 3224	3343 2233
Ka	1322 2122	2221 1122	1122 2122	1332 3122	2223 3223	3333 3223
Ho	1322 0122	2111 0001	0022 1022	1112 2111	2121 3223	2233 2122
AL	1423 1122	2121 1111	1223 3223	1322 3111	2213 3332	2322 2232
Hu	1121 3332	1221 3320	0221 4432	0222 3331	2332 4433	3223 4432
Ap	2322 0123	3021 0122	1222 2012	3322 3022	3333 3122	2233 3223
Pi	2221 1332	1311 2042	0221 3333	2221 2032	3330 3323	4331 2233
Tn	-----	-----	-----	5 4344	4444 5112	3333 4444
Hr	2233 2223	2212 3222	1213 3233	1123 3021	1223 3323	3333 2233
Wa	2222 0112	2220 0110	1233 2103	2321 3122	1313 3231	2223 4222
To	2333 1122	3221 2112	2323 3213	2232 3121	2233 3222	2333 3323
Am	2323 1122	2121 0122	2233 3113	1123 3111	2133 3223	3343 3323

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Aug.	13	14	15	16	17	18
Tr	4654	5663	2213	3356	4332	3454
Co	3556	6553	1124	3332	3331	2232
So	3544	6773	1213	3355	3323	2465
Le	2543	5562	1113	3324	4331	3343
Do	3544	7772	1223	3334	4332	3444
Me	3676	6643	2115	4332	3241	2343
Si	3676	7742	1114	3232	2241	2133
Es	2443	4451	1113	3333	3232	3452
Lo	3444	6662	2214	3223	3232	3443
RS	2443	5562	2123	2233	4231	2343
Ag	2674	4444	1013	2333	4241	3444
Wn	2544	4662	2213	2334	4332	3454
Wi	2544	4562	2213	2334	4332	3454
Ab	2444	4451	2113	2334	3333	3453
Ni	3543	4562	2213	2224	3231	2354
Ma	2443	4551	1103	2233	3232	2443
Sw	2433	3451	1112	1223	3221	1342
Na	2443	3551	1112	2224	3222	2353
CF	2543	3552	2122	2223	4232	3353
Ch	3554	4343	1112	2233	4242	3354
Fu	3443	4551	1113	3223	3223	4353
Eb	1443	5552	1102	3223	3221	2354
TL	2443	5451	2113	3333	3232	3354
SF	1454	5443	0123	3132	4233	2364
Tu	3564	4433	1112	2223	3241	3244
Ks	2554	5542	1113	2323	3121	3265
SJ	2443	4343	1013	0223	3132	2243
Te	3443	3232	2112	2333	3232	2253
Ka	2444	4343	2112	3253	2231	2354
Ho	1554	3222	1002	1122	2221	2143
AL	2443	5441	1113	2222	2321	2253
Hu	2443	4542	0002	3433	2132	3453
Ap	3554	3233	2212	1113	3220	1244
Pi	2443	3232	1012	2313	3133	4243
Tn	3455	6554	3232	3333	4443	3343
Hr	2444	5353	1114	3223	3232	2332
Wa	2453	4542	1223	2311	3230	1232
To	3554	4542	3213	2323	3331	2243
Am	2554	3432	2113	2223	3230	2233
Aug.	19	20	21	22	23	24
Tr	2223	4543	6653	4466	7544	6656
Co	1146	5431	4456	5333	3476	7532
So	1227	4443	6643	4575	7554	5364
Le	1132	3332	6553	3454	7542	4443
Do	1223	4441	6653	3465	7643	5443
Me	1155	5222	5665	6433	4677	7323
Si	1145	5221	5566	5333	4486	7422
Es	0132	3322	5544	3354	5432	4342
Lo	2233	4432	5544	4355	5533	5453
RS	2122	3432	5444	3355	5541	4352
Ag	1144	4332	5674	4334	5565	5232
Wn	1222	3432	5554	4455	6542	4353
Wi	1233	4432	5554	4455	5543	4353
Ab	0133	3432	5543	3354	5443	3343
Ni	1222	3332	5443	3355	5432	4353
Ma	0112	2322	5544	3345	4433	3343
Sw	0121	2321	4342	3244	4332	3342
Na	1222	2322	5343	3354	5432	3243
CF	1223	3332	5443	3354	5442	3343
Ch	1233	3223	5553	3234	5454	4223
Fu	0233	3332	5444	3355	4433	3334
Eb	0112	2332	4433	3255	4443	3243
TL	1243	2342	5555	4354	5452	3342
SF	0223	1443	5544	3335	5452	3---
Tu	1134	4322	6554	4333	5464	5223
Ks	0123	2323	4533	2465	5543	4333
SJ	0232	2222	5342	2223	5344	3223
Te	0132	2313	5433	2234	4354	3232
Ka	1134	3323	3243	3323	4454	4232
Ho	1123	3111	4333	3222	4454	4122
AL	1322	1332	2533	3353	5532	4241
Hu	0121	3321	4432	3443	4333	3322
Ap	2244	3222	5444	3212	4454	4122
Pi	0230	3422	5343	3443	5433	4143
Tn	1233	3444	5444	3564	6554	4343
Hr	0123	3332	4454	3443	4434	3132
Wa	1233	2332	4443	3243	4454	5231
To	3334	4333	4345	3333	4465	5323
Am	2234	4222	4344	4223	3465	4222

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Sept.	1	2	3	4	5	6
Tr	4211	2114	4100	1103	3012	3115
Co	2200	1111	2200	0110	1133	4111
So	3212	2114	3111	1102	2112	2114
Le	2112	2213	2112	2212	3122	2113
Do	3111	3203	2001	2202	2112	2104
Me	2110	1112	2110	0111	2333	3123
Si	1100	1112	2100	0011	1323	2112
Es	2123	2213	2222	2212	3122	3113
Lo	2223	3213	2212	2212	3223	2213
RS	2222	2203	2121	2201	3122	2113
Ag	3111	2223	3112	3322	3333	4333
Wn	2211	3213	2111	1212	3112	3213
Wi	3322	3313	3212	2222	3123	3213
Ab	4323	3313	2223	2222	3233	3113
Ni	2121	2203	2110	2212	3122	2113
Ma	2200	2213	2100	2112	2112	2112
Sw	1122	2112	2122	1111	3123	2112
Na	2211	2213	2111	2212	2122	2113
CF	2212	2203	2111	1212	3223	3113
Ch	3111	2113	3111	1122	3332	2123
Fu	2223	2203	2233	2211	2223	3112
Eb	2101	2112	2110	0101	1101	2002
TL	3211	2212	2110	1112	2223	3213
SF	3234	3323	2344	3322	3133	3213
Tu	2210	1003	2110	0001	1222	2013
Ks	0001	1003	2011	0000	—12	2013
SJ	3100	1122	3110	1111	2222	3122
Te	3121	3223	2111	2323	1222	2222
Ka	1211	2112	2211	1111	1213	2112
Ho	0100	0001	1100	0011	1112	2013
AL	1211	1112	2211	1112	1122	1112
Hu	2000	3211	2100	2211	1211	3211
Ap	2320	1112	1210	0113	2232	3224
Pi	3211	0101	3102	0301	2202	3333
Tn	2343	3223	3344	1123	2344	4223
Hr	2322	3013	2312	3201	1113	1112
Wa	1120	0002	2321	0001	3132	2003
To	2221	2123	3321	1122	2323	3223
Am	2110	0012	2200	0021	2232	2022
Sept.	7	8	9	10	11	12
Tr	4102	1354	1220	3344	4313	5545
Co	1003	3222	1330	3211	2225	6532
So	4112	2363	1211	3343	3223	6545
Le	3112	2232	1221	3333	3222	4344
Do	3002	2242	1111	3343	3313	4434
Me	2001	2322	1330	2222	2233	3323
Si	1002	2222	1330	2211	2324	6432
Es	2012	2342	1122	3332	3223	3323
Lo	3123	2252	1221	3342	3323	4334
RS	3132	2242	1112	2342	3323	3334
Ag	3203	3232	1332	3322	4214	5433
Wn	3113	2352	1222	3343	3323	4434
Wi	3114	2342	1232	3443	4323	4434
Ab	3123	3342	1133	3433	3223	4433
Ni	3112	2242	1121	3332	3313	3333
Ma	3122	2242	1111	2332	2213	3333
Sw	3122	2142	1122	2332	2223	3233
Na	3212	2242	1221	3332	3222	3333
CF	3113	3242	2222	3332	3223	3333
Ch	3212	1122	2321	2211	3303	4233
Fu	3113	2242	1113	3333	3323	3333
Eb	3002	2242	1222	3332	3212	3233
TL	3002	1242	1122	3332	3212	4332
SF	4223	3232	22—	—22	3313	3343
Tu	2012	1122	2331	2411	3323	4333
Ks	3104	3232	1122	3343	2313	4333
SJ	2002	1332	1121	2311	3303	3332
Te	2112	2222	2322	3323	2323	4233
Ka	2112	1231	1121	2322	2213	3232
Ho	1002	2211	2121	2311	1212	3312
AL	2123	2241	2222	2332	3323	4422
Hu	1002	2321	1011	4521	2203	4431
Ap	—2	2212	3322	2222	1213	4213
Pi	3213	1333	2112	2413	2313	1323
Tn	4454	4444	3343	4444	4454	5443
Hr	4224	3332	1423	3321	2334	4332
Wa	3132	1243	3321	2233	3323	4333
To	2323	2242	2332	2223	3313	4332
Am	2102	1222	2321	1212	2313	4333

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Sept.	13	14	15	16	17	18						
Tr	6553	5555	6643	3353	5443	5554	6655	6677	7545	5547	6633	3563
Co	4443	5634	4465	5332	2466	6633	4568	7745	4567	6633	3546	2432
So	7443	6666	6533	3354	5234	5555	6655	6677	7545	6547	6533	3664
Le	8542	4458	5533	3233	4343	4433	5555	6767	5434	4434	5432	2554
Do	8543	5568	7533	4232	5343	5444	6555	7878	7444	5536	6532	3653
Me	5544	5645	4676	4323	3576	6343	5876	6654	5776	6534	3646	1322
Si	4442	6644	4565	4232	2577	7633	4668	7545	4567	5623	3535	2332
Es	5432	3336	4433	4232	4343	4423	3545	5656	4333	4435	3113	2553
Lo	7533	4456	4333	4333	5344	4534	4545	6666	5335	5535	5423	3552
RS	5443	4346	4333	4333	5353	4433	4544	5656	5334	5535	4332	2553
Ag	6563	4547	6554	3233	5565	4444	5767	5557	6655	4435	5533	3333
Wn	6543	4456	5433	4332	5353	5534	4555	6667	5344	5546	4433	3663
Wi	6543	4446	5443	4333	4454	5543	4555	5666	5344	5546	4433	3663
Ab	5433	4445	4443	4333	4353	4434	3545	5556	5344	4435	4333	3553
Ni	5432	4346	4432	4333	4343	4434	4545	5556	5333	5535	4333	3653
Ma	5323	4445	4432	4233	3343	4433	3534	5566	5333	5435	4323	2553
Sw	5432	3345	3332	3332	4232	4433	3444	5545	4333	5435	4222	1542
Na	5432	4445	4442	3233	4343	4433	3545	4556	4333	4435	4323	2553
CF	5443	4445	4433	3333	4343	4433	3556	5566	5344	5435	4323	2553
Ch	6432	4446	5442	3223	4554	4443	5655	5456	6545	4335	5523	2333
Fu	5432	4445	4333	3223	4333	4433	3545	5546	5333	5435	4323	3553
Eb	4332	4545	4332	3133	4355	5433	4556	5566	5234	3435	4424	3553
TL	4433	4545	4433	3233	4343	4433	4536	6655	5333	4435	5423	2553
SF	5443	3355	5434	4334	4353	5444	4556	3556	5333	4436	5444	3444
Tu	5542	4344	5454	3112	4555	5433	4666	5446	5555	4425	4534	2333
Ks	3333	5344	4433	4232	4354	5543	3665	4566	5444	5636	4424	3553
SJ	5432	3344	5432	2112	3342	4333	4535	4346	4334	3225	4321	1322
Te	4442	3443	4441	2232	3443	4333	3565	4356	5444	4235	3433	2423
Ka	3332	4444	3333	4223	3353	5423	4446	6545	3344	5413	2324	2342
Ho	4532	2343	3453	2223	3343	4333	3535	4444	3454	2325	4313	1322
Al	3332	4543	2332	3223	3354	4332	2645	5545	5233	5525	2222	2442
Hu	3331	5544	4421	4321	2333	4543	3434	5655	3323	4545	2311	2431
Ap	4442	3234	3453	3233	3333	4334	3545	4334	4444	3325	4433	1223
Pi	4433	4443	5441	3243	3331	3433	3434	3446	4333	4415	3323	2413
Tn	3344	5545	4443	4335	4453	5554	5545	5555	5444	4546	4455	4554
Hr	4535	4435	4323	3233	3343	4433	4545	4455	5333	3425	4423	3444
Wa	4542	5544	4343	5222	3453	6443	4546	7546	5435	5515	4324	1322
To	4443	5543	4443	4322	3354	5433	4546	6536	5445	5535	4534	2333
Am	3442	3443	4453	3122	3454	5433	4446	6545	4554	4435	4434	2343
Sept.	19	20	21	22	23	24						
Tr	3222	5766	6755	5776	7656	5677	6654	5565	6654	5477	7664	5465
Co	2144	4775	4677	6675	4476	6654	5667	6664	4466	6633	4567	6432
So	2133	5776	5656	6777	8656	6577	7555	5576	6753	5476	7554	7464
Le	3223	4885	5555	5568	8556	5556	6654	5557	7643	4455	4443	4343
Do	2133	5996	5656	6779	8656	5567	7645	5568	7744	5455	6454	6345
Me	2264	4754	4888	6555	6677	7654	6767	6564	6566	5434	4666	6333
Si	1153	4864	4799	7565	5578	7654	5788	6554	5575	6533	3556	6333
Es	3133	5774	4455	5666	5556	5556	4545	5465	5543	3454	4444	4343
Lo	3123	5875	4556	6667	7556	6566	5545	5566	6643	4445	5444	5444
RS	3123	5774	4455	6666	6656	5556	5555	5566	5533	4454	5434	5342
Ag	3344	4675	6788	6556	6667	5545	6765	5456	6665	4454	6654	5343
Wn	3133	5765	4456	6776	5656	6566	5545	5565	3643	4455	5445	5444
Wi	3234	6864	4466	6776	5656	5566	5555	5576	5544	4465	5545	5453
Ab	3233	6754	4465	5665	4556	5555	5555	5465	4544	4455	5544	4344
Ni	3133	5774	4455	6676	5655	5556	5555	5566	5543	4455	5434	5443
Ma	2133	5664	4455	5665	4534	4455	5534	4565	4543	3425	5434	4343
Sw	2122	4654	3345	6655	4544	4455	4444	4454	4433	4443	4333	5433
Na	2133	5654	3454	5665	4555	4455	4555	5455	5543	4454	4434	4343
CF	3134	5654	4455	5665	4555	4455	4555	5465	4543	4354	4444	4343
Ch	3343	4654	5666	5456	6555	4445	6665	4456	6653	4354	5544	5333
Fu	3223	4654	3445	5665	4545	4455	4545	5455	4533	3454	4434	4343
Eb	2022	3775	4466	6675	4466	5555	5456	6365	4444	4355	4335	4344
TL	2023	5764	4445	5565	5555	4555	5545	4465	4543	4454	5444	4344
SF	2233	56--	---	6666	6555	4556	5555	5476	4543	4455	5435	5354
Tu	3244	6644	5556	5455	6555	5435	5665	4465	6654	4354	5544	432-
Ks	0053	4664	-557	6665	5556	5565	5535	45--	--45	5465	4535	5343
SJ	2242	4654	4444	4455	5545	3334	3444	3255	5542	3453	4433	4233
Te	2143	4633	4555	4344	4455	3334	4553	3453	3533	4354	5542	3243
Ka	1133	5633	3466	5343	4446	5433	4455	5345	4443	4344	3435	5322
Ho	1133	4543	3555	3333	5444	3324	5554	3344	5342	3243	3434	3222
Al	1234	5754	2465	5553	3445	5454	4435	5452	5333	2343	3424	5331
Hu	1133	7765	3345	6554	4435	5543	3434	5564	4422	4442	3413	4332
Ap	2333	4544	4555	3333	5454	3334	4454	3244	3444	3243	3443	2233
Pi	2242	6744	5444	4345	4534	3313	3533	4355	5531	3353	4423	3122
Tn	3355	5764	5566	5665	5556	5565	5455	5565	4455	4454	4435	5353
Hr	2333	3765	4455	5555	5544	4454	4545	4365	3533	3443	4444	3243
Wa	2233	4655	3456	6454	5557	5544	4545	5455	5544	4444	4445	5421
To	2243	4654	4566	5455	5457	5435	5556	5455	5555	4444	4445	5333
Am	2133	4643	4556	4453	5455	5344	4655	4354	4454	3334	3444	4323

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Sept.	25	26	27	28	29	30
Tr	5435 6777	7732 2434	6644 4235	6211 2104	4121 4765	5432 2223
Co	2466 7784	4522 2332	5454 5232	5210 2113	2232 6733	2253 2010
So	4336 7778	7743 2424	6644 5236	6211 2114	4111 5766	5332 2112
Le	3334 8889	9733 3323	5744 4324	6311 2212	3121 3743	4222 2111
Do	4333 8999	9843 3323	6755 4325	7200 2103	3021 3845	4321 2101
Me	2567 7666	7752 2322	6655 4233	6210 2113	3132 5633	3353 2110
Si	2547 9886	8743 2322	4464 4232	5111 1212	2232 5533	2243 2120
Es	3334 6889	9633 3322	5545 4333	4212 1102	3121 3543	3222 2101
Lo	3334 9899	9743 3323	5655 4324	5212 2203	3112 4654	3322 2101
RS	4333 7989	8643 2322	5555 4333	4111 2103	3221 3553	3322 2111
Ag	4556 6779	9853 3223	5653 4343	7122 3223	4232 3433	3332 2110
Wn	4444 6799	8633 3323	6565 4334	5221 1113	3222 3654	4322 2111
Wi	4444 6789	8644 3433	5555 4433	5221 1113	3222 4654	4332 3112
Ab	3344 6678	7644 3423	5555 4333	4223 2102	3222 4543	3322 2111
Ni	4334 5788	7533 3323	5555 4333	4211 1013	3221 4653	4322 2111
Ma	3334 5778	7633 3322	5555 4333	4201 1012	3222 4653	3322 2111
Sw	3333 5677	6533 2212	4454 3222	3221 1002	3221 3543	3222 2101
Na	3334 4668	7633 2323	5455 4333	4211 1112	3222 3543	3322 2111
CF	4334 4778	6533 2322	5555 4334	4221 1113	3222 3553	3222 2011
Ch	4445 6567	8742 1233	5554 3343	6121 1113	4231 4333	3332 2210
Fu	3334 5676	6434 2212	5555 4333	4223 2112	3222 4543	3222 2111
Eb	3335 6677	7754 3322	5555 4333	3110 1102	3121 5553	3222 2222
Tl	3435 6777	7633 2222	5555 4333	4110 1003	3121 5543	3221 2010
SF	4336 6678	7743 1313	6566 4333	4223 1103	3321 5553	3332 2---
Tu	---- -655	7733 2223	4565 4234	5110 2112	3232 3434	3332 1000
Ks	3345 6777	7634 3333	5576 5443	3010 0000	3012 6653	2333 3000
SJ	3434 5556	7632 2322	5454 3333	5111 1112	3211 3333	3322 2111
Te	3544 5656	7633 2422	5565 4344	5221 1332	2222 4333	3331 2322
Ka	2334 5556	4533 2322	4566 4222	4221 1112	2221 3322	2322 2101
Ho	2343 4465	5622 1222	4465 4323	3110 0001	2121 3433	2331 1020
AL	1345 5666	4543 1222	5466 4333	3221 1112	2222 5542	2422 2122
Hu	2422 5665	6632 4431	4455 5443	5102 3222	3112 4543	3222 3220
Ap	2344 4566	4644 2322	4555 5234	4220 0113	4222 2433	3231 1213
Pi	3433 4666	7645 2322	5555 3313	5120 2103	3222 3441	3322 3020
Tn	3456 6677	6645 3333	6576 4444	4334 1211	3355 6653	2244 2233
Hr	3335 5667	6645 3323	5566 4232	5221 1102	2023 4542	2222 2001
Wa	2345 6667	5633 1312	5555 5323	3210 1103	3110 5643	3321 2102
To	3445 5676	5633 2323	5565 4334	5331 1113	3331 5533	4332 2112
Am	3445 5565	6623 0222	4565 4223	4220 0122	3231 4522	3332 1112

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Oct.	1	2	3	4	5	6
Tr	1344	5542	2235	2112	2144	1000
Co	1110	0232	2343	1211	1103	4111
So	1011	1232	4432	2225	1002	2143
Le	1111	1322	3332	2213	1102	2132
Do	1121	2332	4432	2314	1112	2132
Me	2010	1222	3333	1122	1003	4112
Si	1111	1332	3342	1212	1103	3122
Es	2011	1222	3323	2214	2112	2132
Lo	2112	1323	3323	2214	1112	2132
RS	2111	1222	3332	2224	1112	1133
Ag	2011	1232	4442	2333	1112	3132
Wn	2122	1332	3332	2224	2112	3133
Wi	3222	1333	3433	2225	2212	2233
Ab	2212	1322	3333	2324	2212	3133
Ni	2112	1322	3332	2214	1112	2133
Ma	2112	1222	3333	2224	1112	3013
Sw	1122	1222	2221	1113	1112	2132
Na	2112	1222	3332	2213	2212	3132
CF	2111	1222	3332	2213	2213	3032
Ch	2121	1232	4332	2223	2111	1123
Fu	2112	2222	3333	2213	1122	3233
Eb	2212	1222	3321	2223	2202	3133
TL	2111	1212	3331	2213	1102	2132
SF	2323	3333	2223	2113	2221	0212
Tu	2111	1222	4332	2223	1102	1122
Ks	2223	1332	4433	2224	1003	2033
SJ	2111	1222	3321	1211	1001	2122
Te	3122	1223	4331	1222	1112	2232
Ka	3211	1322	3332	2212	1212	2122
Ho	2101	0221	2331	1122	1002	2022
Al	4222	1332	2342	2222	2212	3121
Hu	2101	2431	3222	3422	0001	2221
Ap	4211	0222	3442	1022	2222	2032
Pi	3222	2333	3321	2212	1100	1132
Tn	3334	2332	3435	2234	2333	3342
Hr	3231	1311	3332	2213	1222	2021
Wa	2211	0211	3332	0111	2123	3222
To	3211	1233	3342	1113	2213	4123
Am	2201	0232	3332	1123	1113	3112
Oct.	7	8	9	10	11	12
Tr	2211	5555	7754	5557	5534	4457
Co	0234	6554	4476	6643	3366	6523
So	1112	5666	7645	5567	5334	5467
Le	1222	3677	6645	4445	4423	3335
Do	0002	4798	6755	5556	5434	4337
Me	0355	6443	5578	6433	4577	6323
Si	0144	6553	5578	6533	3445	6523
Es	1112	4465	5454	4444	4233	4335
Lo	1113	4676	6544	5545	4334	4335
RS	1113	3565	5554	5544	3223	4235
Ag	2333	4465	5676	4433	4545	5434
Wn	2123	3566	6554	6544	4334	4336
Wi	2123	4565	6654	5555	4334	4336
Ab	1123	3565	6554	5444	4334	5335
Ni	2113	3575	6554	5544	4234	4335
Ma	1012	3565	6554	5544	4324	4325
Sw	1123	3565	5454	5544	3223	3235
Na	2112	3565	5554	4444	3223	4335
CF	2223	3565	5554	5444	4233	4335
Ch	2232	4454	5455	4433	3445	4234
Fu	2123	4465	5544	5444	3323	4335
Eb	2223	3566	5555	5545	4323	5436
TL	1114	4465	6554	5444	4323	5325
SF	2224	3565	6554	4445	4334	5325
Tu	1243	4454	5556	4325	4445	5334
Ks	00--	--	--66	5555	4335	6435
SJ	1132	3364	4554	4333	3324	4324
Te	2242	4264	5554	3224	3423	3344
Ka	1123	4454	4465	4433	2234	4334
Ho	0133	3453	5445	3224	3334	3334
Al	0224	4444	3355	5444	3334	4424
Hu	0134	5764	3433	5554	2222	4553
Ap	1124	3353	4445	3224	3333	3223
Pi	0132	3465	4543	3324	3322	2324
Tn	2234	5545	4375	5455	4345	6435
Hr	1225	3465	4365	4344	3334	5334
Wa	1313	4544	5365	5434	4334	4423
To	3333	4454	4555	5434	4344	4333
Am	1233	4454	4455	4333	4334	4324

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Oct.	13	14	15	16	17	18
Tr	3434	4356	6322	2464	4322	1166
Co	2335	5235	3235	2423	3115	2111
So	3334	4266	6322	2474	4322	1155
Le	2323	2246	5222	1364	3221	1134
Do	2324	3158	6232	0374	3322	1144
Me	3356	5224	3245	2333	2243	2122
Si	2346	5225	4234	1333	2133	2112
Es	2323	2245	5223	1354	2222	1134
Lo	2334	3256	5233	1454	2222	1144
RS	2333	2245	5222	1364	2222	0134
Ag	4335	3236	3334	1244	4332	2323
Wn	3334	3255	5332	1465	3323	2245
Wi	3334	3355	5233	1365	3233	2245
Ab	3334	3345	5233	1354	3222	2144
Ni	2334	3255	5232	1355	3222	1244
Ma	2323	2145	5233	0352	3212	0144
Sw	1233	3245	4232	1352	2222	1134
Na	3334	3244	5232	1353	3222	1144
CF	3334	3244	5332	1354	3223	1233
Ch	3335	3136	3334	2344	4232	1124
Fu	2314	2244	4213	2354	2222	1134
Eb	2334	3245	4333	1443	2111	1134
TL	2325	2145	5332	1353	3211	1244
SF	2345	2136	4334	1454	2101	3144
Tu	4444	3234	3324	1323	3232	1124
Ks	2346	3135	4243	33—	—22	2255
SJ	4333	2234	4213	2334	2122	1123
Te	3344	3245	4323	2333	2132	2224
Ka	2235	3323	2133	2432	2122	2222
Ho	2243	2123	2133	1233	2232	1123
AL	2236	3333	3232	1441	2222	2132
Hu	3333	4333	3223	2543	2112	2323
Ap	2245	1324	3233	1332	3232	0033
Pi	4344	3344	4222	1433	2121	3113
Tn	3345	3335	3245	3453	2332	3244
Hr	2235	3335	4234	3444	2133	2233
Wa	2335	4335	3232	1441	2331	1032
To	3245	4335	4333	2333	3323	2133
Am	2345	3233	3234	1233	3222	1122
Oct.	19	20	21	22	23	24
Tr	6754	3767	6433	3375	5422	3364
Co	5466	6553	4367	5232	2326	3322
So	6644	3677	7334	3374	4323	2354
Le	5543	3476	7323	3242	2323	2233
Do	7644	4597	7333	4353	3323	2423
Me	6566	5333	4466	3122	2436	3211
Si	5565	5544	5465	3132	2425	3211
Es	5434	4465	5233	3252	3333	2232
Lo	5534	4565	6233	3352	3323	2232
RS	5543	4565	5233	3351	3323	2232
Ag	7554	4336	6453	3122	2534	3222
Wn	6544	4565	5333	4362	3333	2342
Wi	5544	4565	5333	4353	3334	2343
Ab	5444	4565	5233	3352	3334	2232
Ni	5544	4565	5233	3352	3334	2232
Ma	5433	4565	5333	4352	3323	2232
Sw	5433	3455	4233	3252	2323	1232
Na	5433	4565	5233	3252	3333	2232
CF	5443	3555	5233	3352	3333	2232
Ch	6443	3336	6353	2232	3434	2122
Fu	5433	4345	5232	3242	3323	2232
Eb	4443	4465	5333	3253	2332	2242
TL	5433	4455	5233	3342	2334	3332
SF	4543	3455	3233	3332	3433	3332
Tu	5544	4434	6354	2232	3434	2221
Ks	5443	5446	4233	3353	2334	3343
SJ	5333	3434	5232	2231	3333	2222
Te	3544	2435	6333	3242	3333	2223
Ka	3533	4334	2344	3232	2223	2122
Ho	4433	3325	4243	2121	2234	2112
AL	3323	4234	4222	3241	2323	2332
Hu	4323	4444	4213	3331	2213	4421
Ap	4333	3334	4243	2022	3333	2122
Pi	5331	4345	5321	3132	3322	2102
Tn	4445	4445	4333	3342	2344	4343
Hr	3444	4344	4234	3042	2244	3232
Wa	4522	3345	4223	3232	1323	2222
To	3543	4334	4344	3232	3433	2233
Am	4343	3234	4343	3121	3434	2112

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Oct.	25	26	27	28	29	30
Tr	2000 0000	0113 2136	4432 3111	1233 7775	4233 3111	1232 2010
Co	0000 0000	1035 3123	3333 3001	0337 7873	3222 2112	1325 2010
So	1000 1000	1113 2236	4332 2101	1224 7875	4333 4111	2232 2110
Le	2111 1110	0122 2226	3322 3011	0234 8995	5222 3211	1232 2110
Do	2000 0010	0003 3117	4422 3001	0224 9985	4332 4212	1333 2110
Me	0000 0001	1135 3223	2531 2001	0434 7773	2221 0111	0344 1110
Si	0000 0100	1125 3223	2322 2000	0335 8985	3222 2112	1244 1120
Es	2001 1101	0023 2125	3312 3001	0224 5894	3332 3101	1223 2110
Lo	2112 1011	1123 2126	3422 2101	1224 9995	3332 3111	1223 1010
RS	2000 0010	1023 3126	3322 2001	0236 7895	3321 3111	1223 1110
Ag	1000 2211	1123 2224	3422 2221	0444 6593	3211 3222	1343 1211
Wn	2100 0111	1124 3226	3322 2102	1334 6895	3322 3111	1323 2110
Wi	2000 1011	2114 3236	3333 2102	1335 7895	4332 3111	1333 2120
Ab	2123 2211	1133 3235	3323 3101	0335 6885	3333 3211	1233 2210
Ni	2101 0011	1123 3236	3322 2101	1324 6784	3222 3111	1323 1010
Ma	2000 0011	1113 3216	3312 2002	0224 6675	3221 2111	1223 2110
Sw	1011 1111	1133 2126	3322 2001	0224 6777	—22 2111	1223 1110
Na	2101 1011	1113 3235	3322 2101	1224 6775	3222 2111	1223 2110
CF	2100 1011	1124 3226	3322 3101	1334 6774	3222 2111	1233 2010
Ch	1100 0011	2123 1234	2312 1001	0334 6585	3221 2202	1343 1110
Fu	2223 1200	0123 2126	3311 1101	1222 6774	2212 2200	0223 1000
Eb	2100 1111	1114 3125	4312 2101	0223 6885	5533 3322	2223 2110
TL	1100 0011	2013 3235	4312 3001	0234 7885	2211 2201	1233 1010
SF	2232 1202	2234 3344	4434 2201	1235 76-6	3321 2201	1333 1100
Tu	1000 1011	1233 2234	2322 2002	1435 6863	3212 2122	1443 1000
Ks	2012 3233	3334 3345	4423 4212	2325 8675	3323 3211	1223 2110
SJ	1101 0111	2123 1234	3312 2202	1334 5766	4211 2112	1222 1111
Te	2110 2212	2233 3345	2332 1112	1232 6765	4323 3221	1332 1122
Ka	2110 1112	2123 3214	2212 3102	1336 6774	3222 2112	1223 1011
Ho	2100 1012	1123 1123	1301 2002	0325 5763	2211 1012	1323 1010
AL	2111 1111	2124 2234	2212 3101	1425 7772	2222 2111	2323 1111
Hu	1002 3322	1124 4334	2202 3212	0325 7776	3212 3222	0221 2220
Ap	2100 0033	2133 2234	3332 2002	1335 5664	4422 2222	2233 0111
Pi	1100 3222	2233 4245	2321 1001	1335 5766	4312 3112	1312 4122
Tn	2244 3122	2233 3344	3222 4213	2326 8776	4334 3222	2223 2121
Hr	1121 2012	1345 4234	3323 3201	0335 7766	3333 2000	0233 2210
Wa	3121 0111	3324 3224	3323 3101	3335 7773	4422 2112	3333 1110
To	2221 2123	3234 3224	3323 3222	3445 6775	5432 2222	3433 2132
Am	1201 0103	2234 3233	2321 2113	2435 5764	4411 2123	2433 0111
Oct.	31					
Tr	0100 1003					
Co	0000 0020					
So	0110 1012					
Le	0111 1111					
Do	0100 1011					
Me	0000 0010					
Si	0000 0121					
Es	0001 1101					
Lo	0101 1011					
RS	0000 1111					
Ag	0001 1111					
Wn	0110 1112					
Wi	0111 1112					
Ab	0122 1112					
Ni	0000 1012					
Ma	0000 1012					
Sw	0121 1001					
Na	0110 1012					
CF	0111 2012					
Ch	0100 1011					
Fu	0111 1001					
Eb	0000 0001					
TL	0000 1112					
SF	0211 1223					
Tu	0100 0011					
Ks	0210 1112					
SJ	0100 0120					
Te	1110 1221					
Ka	1111 1012					
Ho	0100 0011					
AL	1211 1111					
Hu	0002 3221					
Ap	2210 1021					
Pi	0212 4243					
Tn	0222 3222					
Hr	0131 2000					
Wa	2122 1012					
To	2221 2132					
Am	2101 0223					

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Nov.	1	2	3	4	5	6
Tr	3010	1124	3331	3544	4533	4476
Co	0003	1022	1444	4331	5465	6323
So	2011	1123	3221	3545	5433	5376
Le	1012	1112	2322	2324	3433	3346
Do	1011	1013	3321	2334	4423	3367
Me	0002	1122	2343	3221	5466	5123
Si	0002	1122	1443	2221	5455	5333
Es	1022	2113	2323	2333	3433	3345
Lo	0021	1113	2322	3434	3433	4446
RS	1012	1013	3322	3433	3443	4345
Ag	0001	2222	3323	3123	4555	5234
Wn	1012	2123	3422	3434	4434	4446
Wi	1012	2123	3323	3433	3434	4346
Ab	1022	1233	3333	3333	3434	4246
Ni	1012	2123	3322	3434	3433	4335
Ma	1012	1123	2322	3323	3433	4345
Sw						
Na	1112	2123	2322	3323	3433	4245
CF	1022	2123	3322	3433	3433	4345
Ch	0012	1123	3322	3123	3454	4233
Fu	1011	1013	2322	3423	3423	4335
Eb	0012	1023	3322	3323	2533	5345
TL	0002	1023	3323	4234	3433	5235
SF	1223	2234	3332	3233	3434	5236
Tu	0012	1114	4332	2122	4454	4333
Ks	0012	2214	4323	3433	4322	2323
SJ	0012	1113	3221	2123	2233	4234
Te	1012	0213	4332	2224	3343	2244
Ka	1111	2113	3233	3333	3345	3334
Ho	2101	0213	3322	3221	3322	3134
AL	1112	1113	3122	3312	2234	4434
Hu	0011	2223	3211	4333	2133	4542
Ap	1212	1123	4423	3134	3323	3334
Pi	0011	2244	4323	3223	2342	3344
Tn	2243	2113	3233	4322	2324	5445
Hr	0111	2124	3243	3023	2323	5235
Wa	2323	1104	4432	3322	4434	3323
To	2322	2123	3333	3322	3333	4333
Am	2122	1123	2332	2332	2343	3333
Nov.	7	8	9	10	11	12
Tr	6623	3444	5301	1242	2233	5445
Co	4456	5522	2100	4021	1254	5431
So	5523	3445	5311	1153	1223	4454
Le	5532	2323	4211	1032	1223	3432
Do	5423	3423	4211	0033	0233	2433
Me	6545	4322	2200	2011	1464	3321
Si	4434	4422	2100	2121	1453	4420
Es	4432	2322	3211	1022	1233	3332
Lo	5433	2333	3212	2032	1233	3432
RS	5333	2332	3212	1132	1233	3433
Ag	4442	2332	3201	2132	1443	3322
Wn	5433	3332	4212	1133	2334	3433
Wi	5433	3332	3223	2133	1334	4433
Ab	4444	2333	3323	2232	1333	3433
Ni	5333	3332	3212	1033	1334	3433
Ma	5322	2322	3111	1131	1223	3432
Sw						
Na	4322	3322	3112	1032	1323	3332
CF	4323	2322	3112	1032	1334	3323
Ch	4433	2323	3121	1123	1443	2322
Fu	4422	2332	3111	1032	1213	3332
Eb	4412	3333	3111	1022	1333	3432
TL	4422	3332	3111	1032	1333	3432
SF	4334	3433	4332	2132	1323	3432
Tu	5433	3322	4110	1121	1443	2322
Ks	5323	3333	4100	0032	0233	3322
SJ	5332	2223	3210	0021	1333	2322
Te	5432	3232	3220	1221	1342	2332
Ka	3233	3322	3110	2021	1333	2421
Ho	4232	3222	3010	1021	1342	2222
AL	3223	2223	3121	1122	2243	4221
Hu	4322	4543	3011	2332	1333	4553
Ap	5322	3333	3311	1232	2232	3223
Pi	5432	5413	3320	3322	1332	3432
Tn	4234	2333	4233	2122	3354	5443
Hr	3343	2433	3222	2012	1243	3332
Wa	4434	4224	4321	2132	4333	4411
To	3324	4333	3231	3133	3343	4423
Am	5324	3324	4121	2132	3332	3423

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

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Nov.	13	14	15	16	17	18
Tr	3323	4655	6443	4565	5534	4554
Co	1266	6763	5364	6653	4457	4433
So	3223	5766	7343	4666	6433	4545
Le	2233	3676	7332	3487	4333	3434
Do	2224	4787	8343	4588	5334	4534
Me	2367	7453	6463	5444	3566	4333
Si	1256	5553	5373	6443	3565	4432
Es	2234	3565	5343	3465	4323	3433
Lo	2334	4666	6333	3567	4323	5534
RS	3234	3666	5333	3565	4333	4533
Ag	3246	4355	6453	4355	4643	3323
Wn	3344	4666	5443	4566	4434	4544
Wi	3345	4666	5444	4566	4434	4534
Ab	3245	4555	4343	4565	4434	3433
Ni	3334	4656	5343	4565	4324	4534
Ma	3244	4555	4333	3564	4333	4533
Sw						
Na	2343	4555	4333	3465	4333	3433
CF	3344	4555	4333	3565	4333	4433
Ch	3345	3345	5453	4355	4643	3334
Fu	2234	4545	4332	3454	4323	4433
Eb	2234	4555	3333	4454	3323	2433
TL	2244	5555	4343	4554	4324	3433
SF	---	5456	4442	4564	4424	3443
Tu	2344	4434	5453	4443	3544	3332
Ks	2355	5665	5442	5554	3334	3443
SJ	2334	4434	4342	3353	3423	2332
Te	1334	2433	5443	3253	2433	2232
Ka	2255	3543	4342	4333	1243	4323
Ho	1333	2344	4451	4242	3443	3332
AL	2345	5554	4432	4543	2223	4532
Hu	1233	5554	3333	5553	1312	4542
Ap	2233	3344	4242	4343	3333	2233
Pi	2333	4534	3333	3363	3221	3333
Tn	3245	6554	4343	5554	3323	3443
Hr	3345	5455	4344	4454	3343	4333
Wa	4335	4554	5432	4454	3433	4422
To	3444	4553	5443	4343	4444	4432
Am	2434	4444	4453	4343	2444	4322
Nov.	19	20	21	22	23	24
Tr	2311	1325	4201	1456	4211	0045
Co	0200	2121	1100	3433	2200	0012
So	1211	1314	3211	1566	3211	1055
Le	1111	1213	3211	1345	2211	1134
Do	0111	1214	3200	1356	3211	1034
Me	0310	1111	1100	1323	2210	1122
Si	0320	1221	1100	1432	2111	0022
Es	1101	1223	3211	1244	2211	1033
Lo	1111	2223	3211	1354	3211	1043
RS	1111	1223	3210	2354	2211	1044
Ag	1321	2122	3210	1333	2311	2232
Wn	1211	1224	3210	1355	3312	1144
Wi	1211	2224	4212	2355	3322	2144
Ab	1212	2223	4123	2344	2322	1134
Ni	1211	1223	4211	2355	3311	1144
La	2211	2223	2211	2344	2211	1133
Sw						
Na	1211	2223	3211	2354	2211	1134
CF	1222	2223	3211	2344	2312	2144
Ch	2320	1123	3211	1334	2321	1122
Fu	1221	0223	2121	2334	2232	1033
Eb	0211	2233	3200	3334	1222	1133
TL	1211	1233	3221	2344	2212	2133
SF	0221	1332	1232	3345	1332	2233
Tu	2310	2232	2211	2333	2222	2122
Ks	0121	1234	2211	2345	2322	2143
SJ	2311	1233	2210	1333	2212	1113
Te	2322	2232	1212	1143	2222	2233
Ka	0211	1232	1212	2433	1322	3032
Ho	1210	1132	1200	1133	2211	1022
AL	1221	2233	2212	3444	2322	2132
Hu	2211	3432	2101	3653	2211	3243
Ap	2210	1133	1201	1333	3222	2122
Pi	1200	3334	3223	4453	2211	4333
Tn	2222	2343	2233	3445	3322	3233
Hr	0321	2132	3222	2344	2232	3032
Wa	3321	1122	4422	2353	3322	2123
To	3321	2232	4422	3433	2332	2232
Am	2311	1223	2311	2333	3321	1132
Tr	5211	2344	5323	4455	5431	3554
Co	2114	4342	3315	5533	2213	6621
So	5512	2235	3311	3565	4321	4543
Le	3111	1243	3211	2344	2211	3422
Do	4101	2154	3212	2454	3311	3621
Me	3013	3233	3224	3333	2221	2311
Si	2113	3332	2114	3433	2112	4422
Es	3112	2234	3212	2343	3210	2431
Lo	4212	2244	3212	3454	2322	3521
RS	4122	2234	3212	3354	3322	3521
Ag	4112	3234	2312	3343	3221	3541
Wn	4212	2244	4322	3454	3322	3532
Wi	4222	2344	4222	3454	3322	4532
Ab	4133	2344	3222	3454	3312	3432
Ni	4222	2244	4213	3454	3312	4522
La	3222	2343	3222	3443	3222	4432
Sw						
Na	4212	2244	4212	3343	3321	3422
CF	4212	3244	4312	2443	3312	3422
Ch	4222	2244	3322	3333	3222	3322
Fu	3122	2234	3222	3343	3211	4421
Eb	3212	2253	3322	3443	3210	4522
TL	4212	2244	3212	3443	3311	4422
SF	3143	1334	4033	4453	3221	4432
Tu	4222	3334	3323	2343	3221	3322
Ks	4122	3454	3--2	4544	3111	4521
SJ	3221	1334	3211	3343	2212	3112
Te	3222	3234	3222	3354	2222	3132
Ka	3222	3333	3212	3532	2112	3311
Ho	2112	2223	2113	2342	2111	2211
AL	2222	2223	3122	4432	2231	5422
Hu	3211	3453	3211	5542	2111	5532
Ap	2222	2233	3223	2343	2220	2324
Pi	---	---	---	---	---	---
Tn	3332	2343	3332	5443	4343	5532
Hr	2132	2333	3323	4443	2222	4421
Wa	3313	3343	3312	3534	3322	4512
To	3323	3343	3323	3543	4332	4423
Am	3223	3233	3323	1434	3322	3423

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Nov.	25	26	27	28	29	30
Tr	5323 4456	4311 4453	4111 1134	3332 4457	4433 4556	6122 4354
Co	2235 5523	3223 6332	1114 2111	1123 6633	2446 6532	3242 5311
So	5223 4447	3211 3342	2111 1124	2332 4477	4333 4556	5122 4353
Le	3132 3335	2112 3242	2111 1113	3222 3244	3323 3444	4122 3332
Do	3222 2336	2211 2352	2111 1112	3222 3356	4323 4545	5122 3332
Me	3243 3423	2111 5321	1123 1111	2112 3333	3556 6323	3152 3221
Si	2124 3322	2122 5331	1113 2211	1112 4433	3445 5422	2041 4311
Es	2122 2325	2112 3242	2121 0113	2222 3234	3223 3444	4122 3221
Lo	2222 3435	2212 3352	2111 1123	3222 3345	4323 4544	4122 4332
RS	2232 3435	2211 3252	2111 1122	3222 3345	4323 4544	3122 3332
Ag	3233 3334	2112 4331	2111 3222	3212 3335	5334 3334	3142 4231
Wn	2222 2436	2211 3352	2222 1123	3232 4345	4323 4554	4233 4332
Wi	2233 3435	2222 4353	3222 1223	3332 4345	4334 4554	4233 4333
Ab	2133 3435	2122 4242	3222 1123	2232 4344	3234 4444	4243 4332
Ni	2222 3435	2211 3352	2211 1123	3222 4345	4323 4544	3222 4333
Ma	3232 3435	2222 4242	2222 1123	2222 4345	3333 4543	3122 3322
Sw						
Na	2222 3334	2211 3242	2212 2123	2222 3344	3323 3444	4222 3232
OF	2232 3435	2212 3242	2222 2123	2223 3344	3323 3443	3232 3332
Ch	3233 2334	2111 3232	2111 2112	3222 3335	5334 3334	3142 2212
Fu	2221 3435	1111 4242	2121 0113	2222 4234	3223 4343	3121 4232
Eb	2211 3425	2211 4343	2212 1223	2222 4445	3213 4544	4121 4331
TL	2222 3425	2111 4342	2112 1013	2222 4344	3223 4443	4222 4131
SF	3233 3535	2222 4323	1121 2023	2223 4435	3244 3533	1132 4331
Tu	3233 2323	2211 3331	2212 1112	3123 3334	4424 4323	3251 3322
Ks	1112 2545	2111 4342	2111 0103	2123 4445	1224 5434	3132 4332
SJ	3132 2223	2111 3232	2112 2211	2112 4334	3222 3332	2031 4211
Te	3232 2233	2112 3133	2112 1222	2023 3344	3222 2331	3231 2231
Ka	2124 3333	2112 4231	1212 2111	1122 3433	2324 4322	1232 3222
Ho	3123 2223	1111 3221	1102 1011	1122 3332	3313 3311	2131 1111
Al	2222 3434	2111 4341	1111 1212	1222 4433	2223 4432	3222 3232
Hu	2111 4442	2100 4431	0111 3332	0012 4543	2112 5552	2111 3432
Ap	2323 2223	2211 3221	2212 2232	3222 3432	3223 3233	3333 2222
Pl	-----	-----	-----	-----	-----	-----
Tn	3222 4534	3222 4332	2222 2222	3333 5333	2344 4333	2343 4342
Hr	2233 4424	2133 4332	2223 2313	1333 3333	2234 4323	2332 4331
Wa	4233 3333	3322 4243	4321 1113	3222 5433	3233 5434	2431 4233
To	3334 3423	2332 4242	3212 2222	2233 4433	4334 5333	3232 4233
Am	3223 2323	3222 4132	2202 1233	3223 3433	3334 4332	3231 3222

TABLE 1 THREE-HOUR-RANGE, K, 1951

Dec.	1	2	3	4	5	6
Tr	3332	3355	4322	3443	5312	3346
Jo	1236	4421	3445	4442	2134	3411
So	2212	3344	3321	3455	5202	2256
Le	2212	2233	3232	2443	4311	2324
Do	3212	3334	2331	2343	5311	1224
Me	1334	3212	2543	3321	2245	2221
Si	1345	4311	2543	2321	1233	3312
Es	2213	3233	3332	2332	3211	1223
Lo	2223	3333	3332	2333	4212	2334
RS	3212	3333	3331	2333	3211	2334
Ag	3323	3222	2532	3222	2214	2222
Wn	3223	3344	3331	2343	4212	2334
Wi	3224	3333	4332	2333	4232	2334
Ab	3223	3333	3332	2333	4212	2334
Ni	3223	3333	3331	2333	3211	2334
Ma	3222	2333	2321	2333	3220	1224
Sw						
Na	2222	2333	2321	2333	3211	1224
CF	3223	2233	2332	2333	3222	1223
Ch	3323	2232	2532	2122	2223	1223
Fu	2123	2233	3332	2232	3111	1124
Eb	3222	2333	2321	2332	4221	0124
TL	2223	2323	2322	2333	3212	1223
SF	4123	2233	1303	3133	3212	2234
Tu	3233	2122	3433	3221	2224	1222
Ks	1003	3223	2300	2233	3201	1224
SJ	1212	2233	2401	1221	2102	0112
Te	2222	2223	2323	3332	1123	3242
Ka	2123	3322	1212	2332	2212	2223
Ho	1113	1121	1321	1110	1102	1212
AL	2112	2322	2211	1231	1111	2224
Hu	1213	5432	2200	3332	1101	2332
Ap	3213	2222	2322	2221	2202	1223
Pi	-----	-----	-----	-----	-----	-----
Tn	3334	3233	2332	2332	4333	3234
Hr	1224	4223	2322	2332	3222	1113
Wa						
To	3334	3423	3332	2332	3222	2223
Am	2223	4222	3332	2333	1212	2123
Dec.	7	8	9	10	11	12
Tr	2201	3455	6545	5565	5636	6674
Co	0105	4441	3346	6664	3367	7663
So	0111	2465	6435	5676	4546	6774
Le	1102	2443	6334	4475	4434	4653
Do	1101	2343	7445	4585	4435	6763
Me	1104	3221	4377	6544	3456	6553
Si	0104	3431	3267	5654	2347	7553
Es	2102	2343	5345	4464	3434	4553
Lo	1112	3344	6344	4575	4434	5653
RS	2112	3343	6344	4574	4434	5553
Ag	2103	3332	6455	5444	3545	5553
Wn	2102	3344	6345	4574	4434	5663
Wi	2113	3444	6445	5575	4544	5663
Ab	2123	3444	6345	4565	3434	5553
Ni	2112	3444	6334	4574	4434	5553
Ma	2112	2334	6335	4564	3434	5553
Sw						
Na	2212	3344	5335	4564	3433	4553
CF	2102	2344	6335	4564	4434	5553
Ch	2202	2232	6355	4444	3535	4453
Fu	2112	2443	6335	4554	3323	4553
Eb	2102	3334	5335	5464	3423	4553
TL	1113	4443	5335	5565	3434	5553
SF	2113	3542	6446	5565	34--	5563
Tu	1002	3412	5365	4443	4546	5552
Ks	0023	4553	5446	5665	3455	5764
SJ	2002	3422	5244	3453	3514	4342
Te	2212	3312	5344	3354	4423	3442
Ka	1112	3333	4334	4432	2335	3332
Ho	1012	2322	4354	3243	3334	4432
AL	1123	4452	4335	4552	2334	4642
Hu	1002	4543	3234	6553	2324	5652
Ap	2222	3333	4444	3243	3434	3322
Pi	-----	-----	-----	-----	-----	-----
Tn	3233	5543	5545	5554	2344	5653
Hr	1114	4432	5334	5454	3344	5553
Wa						
To	2223	3423	4455	5544	3445	5544
Am	2213	3334	4444	4453	4435	4443

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Dec.	13	14	15	16	17	18						
Tr	2221	1124	3110	0046	6332	4464	5331	2234	3412	5556	4543	3546
Co	2133	3100	0111	0123	4235	4453	2223	1121	1214	5653	4433	6444
So	1111	1012	2110	0037	6322	3374	3211	2324	1311	5556	4532	2445
Le	1222	1112	1111	0035	4323	3243	2321	2213	2312	2554	3422	2434
Do	2222	1002	1101	0046	5323	3353	3322	2313	2311	4565	4422	3545
Me	1333	2010	1110	0113	3253	4343	2232	0111	2213	2343	3544	4334
Si	1333	3000	1111	1223	3243	3343	2232	1111	1213	3443	3334	4333
Es	1221	2012	2201	1034	4233	3352	2322	2223	1312	3444	3322	2434
Lo	2222	2123	2211	1145	5223	3363	3312	2323	2312	3554	4432	3445
RS	2221	2013	2121	1045	4223	3363	2322	2323	2312	3444	4332	2445
Ag	1323	2121	2211	1234	4333	3343	2322	2222	2422	3344	4533	3335
Wn	2322	2123	2311	0135	5334	3363	3322	2323	1322	3554	4432	3545
Wi	2322	2123	2211	1145	5334	3453	3332	2223	2322	4554	4433	2545
Ab	2322	2122	1312	1144	4233	3353	3332	2233	2322	3444	4332	2445
Ni	2221	2123	2211	0145	5223	3363	3322	2323	3312	3444	4332	2445
Ma	3222	2122	2211	0145	3223	3353	3322	2323	3322	3454	3332	2435
Sw												
Na	1221	2112	2211	0134	4224	3353	3322	2223	2322	3454	4432	2335
CF	2222	2112	2211	1135	4224	3353	3322	1323	3312	3444	4432	3435
Ch	2322	2001	2220	0124	4333	3343	2322	1232	3421	2334	4532	2235
Fu	1211	2012	2321	0034	4223	3353	3322	2223	2212	3444	4322	2335
Eb	1210	1012	1210	0044	4323	3353	2331	1112	1211	2343	3332	2335
TL	1322	2013	2322	0145	4224	3253	3332	2223	2212	3454	4432	2334
SF	2333	4112	1321	2155	4334	3263	2333	2233	2311	3344	2332	2444
Tu	2333	2011	1221	0223	4233	4352	2221	1132	2322	3444	3432	3324
Ks	1210	2122	1331	0145	3334	3---	--13	3334	---33	345-	3333	43--
SJ	2212	1122	1211	0234	4222	2342	2321	2231	2312	2344	4322	2344
Te	1222	2222	2221	2134	3231	3352	2222	2221	2312	3334	3322	2424
Ka	2222	3112	1211	0124	3233	3332	2222	2222	1223	3343	2332	3433
Ho	1112	1022	1210	0133	2123	2232	2221	1122	1201	3333	2331	3223
AL	2221	1112	2221	1134	2234	3342	2322	2322	2223	3544	2222	3234
Hu	1101	2232	1212	1334	3114	5565	2211	3332	1103	4553	3313	4434
Ap	2320	2032	2220	2134	3222	2232	3222	21---	3401	3234	3332	3224
Pi	----	----	----	----	----	----	----	----	----	----	----	----
Tn	3322	2223	3323	1244	4434	3343	4443	3223	2234	4444	3332	3333
Hr	1123	2112	1323	3345	4333	3352	2312	2122	1212	3443	3332	3334
Wa												
To	3332	3223	4331	2224	4343	4343	3332	2222	3323	4444	3443	4334
Am	2322	2012	2321	1033	4333	3342	3332	1113	3213	3333	3332	3334
Dec.	19	20	21	22	23	24						
Tr	4433	4555	5523	3334	3100	1206	5523	5777	5423	3332	2000	0033
Co	3335	6533	3344	3221	1012	1112	3336	6653	4216	3311	0001	0010
So	4323	4445	4422	2233	3110	1205	3423	5777	6313	2321	1000	0032
Le	3223	3434	3323	1232	2100	1114	3412	3765	5312	2211	2011	0021
Do	4323	3544	4423	2332	2100	1214	3512	3776	6313	2320	1000	0032
Me	3246	5433	2335	2211	1011	1113	2536	5544	6326	2111	0000	0111
Si	3334	5423	2334	2212	1001	1112	2436	5554	5316	2221	1000	0021
Es	3223	4434	3333	2132	2100	1114	2413	3554	4223	2220	1001	0011
Lo	4323	4544	3333	2332	2111	2214	3423	3665	4323	2321	2101	1132
RS	4233	4544	3323	2232	2111	1214	3422	3654	4323	2321	1001	1032
Ag	3234	3434	5424	2111	2111	2213	3634	4445	5424	2220	1100	1211
Wn	4334	4545	4433	2333	3211	1215	3423	3665	4323	2321	2111	1132
Wi	4234	4545	4434	2333	2112	1225	3434	3665	5333	2331	2101	0122
Ab	3234	4444	4334	2132	2122	1224	3423	3555	4324	1231	1122	1222
Ni	4234	4545	4323	2223	2211	1214	3412	3664	4223	2321	2110	0132
Ma	3234	4445	3333	2233	2211	1214	3423	3655	4323	2221	2101	0112
Sw												
Na	3223	4434	4333	2232	2212	1214	3423	3654	4323	2221	2101	1122
CF	4223	4434	4423	2232	2212	1214	3323	3554	4323	1220	2101	0132
Ch	3234	3334	4424	2111	2111	0124	3634	3344	4424	2121	2000	0111
Fu	4323	4434	3323	1133	3211	1113	2313	3554	4323	2221	2111	0021
Eb	3223	4434	3323	2122	2101	1114	2313	3554	4323	1221	1000	0011
TL	3123	4434	4323	2122	2011	1124	2424	4555	4323	1321	1001	0112
SF	3134	5534	3214	1012	2121	1223	2324	4565	432-	-232	1011	1022
Tu	3334	3434	4414	2212	1111	2123	3524	3544	4324	2231	1000	0012
Ks	---34	5645	3224	3132	102-	----	---24	4565	4334	2332	1000	0122
SJ	2322	4234	3313	1232	1111	0234	2422	2543	3313	2321	1001	-211
Te	2223	2224	2312	1122	2112	3124	3523	2543	4423	3231	1001	2121
Ka	2233	4323	2223	2211	1111	2212	2324	4542	3223	2222	2110	1111
Ho	2224	3323	3223	1111	1110	2123	2323	3333	4323	1111	1010	0000
AL	2224	5434	2223	2222	1211	2222	2314	3653	3224	2321	1211	1121
Hu	2213	5543	2303	4311	0013	4333	2313	5443	3222	4441	0001	1231
Ap	2223	2324	3222	2123	2320	2224	3322	3443	3422	1131	2310	0032
Pi	----	----	----	----	----	----	----	----	----	----	----	----
Tn	4344	5444	4434	3223	3223	2223	3115	3554	5334	3321	3221	2122
Hr	3333	4333	2222	2222	1033	2213	2334	3564	3333	2221	1123	2111
Wa												
To	4334	4334	3333	3333	2322	2233	4334	4553	3433	2313	3212	1122
Am	3334	3324	3323	2133	1211	2123	3434	4544	5333	1223	3100	0022

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1951

Dec.	25	26	27	28	29	30
Tr	3100 0213	0000 0020	0221 2116	6665 6674	5101 3323	0022 1115
Co	0002 0000	0001 2000	0203 2003	2576 7631	1103 5400	0004 5011
So	1101 0112	0000 0010	0211 2115	4776 6665	5100 3302	0112 1115
Le	1101 1112	0011 1111	1212 2113	3665 5454	4101 3221	0012 1113
Do	2101 1002	0000 0010	0312 3014	4775 6655	4101 3322	0002 1114
Me	0011 1100	0001 1000	0323 2013	2687 7631	1012 3310	0014 4112
Si	0012 1001	0001 1110	0312 2023	3788 8731	2012 4410	0013 4122
Es	1001 1102	1001 0000	0202 3014	3654 4444	3101 3221	0002 2213
Lo	2102 2212	1012 1110	1312 3024	4665 6554	3201 3322	1112 2214
RS	1111 1102	1002 0110	0312 3014	4665 5444	3201 3222	1012 1124
Ag	2101 2121	0002 2110	0422 3215	3786 6432	2101 3320	1113 3113
Wn	2112 2113	1012 1121	1313 3125	4665 6544	3111 3222	0013 2224
Wi	1112 1213	1011 1121	1323 4125	4665 6455	3212 4322	1213 2224
Ab	1112 1112	0011 0111	0313 3125	4664 5454	3212 4321	0112 2224
Ni	2111 1112	1011 1110	1312 3125	4665 5453	3101 3322	1112 2124
Ma	2112 2223	1011 1111	1322 3224	4545 5453	2111 3221	0013 2124
Sw						
Na	2102 1112	0011 1111	1322 3124	3554 5453	3111 3321	0112 2224
CF	2102 2112	0012 1110	0322 3014	3544 5443	3101 3221	0102 2124
Ch	2111 0111	0011 1010	1323 3125	3665 5432	3111 2220	0013 2123
Fu	1211 1112	0211 1110	1212 3125	3554 5353	3211 3311	1202 3223
Eb	0001 1112	0001 0100	0212 3124	3555 6543	2001 3310	0001 1224
TL	1102 1112	0001 0000	0323 4124	3564 5453	3002 3320	0012 2224
SF	1032 1111	0033 2110	1333 4235	4565 5554	3211 3321	0223 3215
Tu	1012 1110	0011 2001	0433 3035	4766 6432	3122 4211	1013 3333
Ks	1001 0012	0010 0010	0314 5---	---56 6454	3131 3222	1123 2235
SJ	1001 0311	0001 1111	1212 4135	3665 5432	2100 2220	1113 2234
Te	1111 2210	1001 3121	1323 3135	3764 5522	3122 2121	1113 3124
Ka	0111 0200	0021 2111	1223 4134	3745 5532	1211 4221	1023 3223
Ho	1001 0000	0001 1011	1213 3135	4864 5511	1101 3222	2113 3234
Al	1111 1212	0121 1121	1323 4135	3765 5441	1211 2221	1123 2224
Hu	1001 2320	0001 3231	1113 5435	4674 7733	1001 3231	1012 2333
Ap	2311 2122	3212 1122	2223 4045	4764 5421	3312 3222	2312 3234
Pi	-----	-----	-----	-----	-----	-----
Tn	3211 2222	3232 3221	3324 4146	4756 6453	3333 3322	3234 3334
Hr	1221 2001	0132 2110	1224 5235	3645 5453	2222 2210	0023 3214
Wa						
To	2222 2222	3222 3222	3434 4235	5655 6533	2322 4323	2233 4333
Am	2211 1122	1011 1122	2423 4134	5645 5433	2221 3122	1123 3223
Dec.	31					
Tr	4334 4566					
Co	2256 6654					
So	3-34 4576					
Le	3234 3565					
Do	3234 3666					
Me	2267 5544					
Si	3257 5543					
Es	3234 3455					
Lo	3234 4554					
RS	3334 4555					
Ag	3255 4443					
Wn	3345 4565					
Wi	3335 4565					
Ab	3245 4565					
Ni	3234 4555					
Ma	2234 4444					
Sw						
Na	3334 4454					
CF	4334 4454					
Ch	3254 4444					
Fu	3334 4454					
Eb	3233 4554					
TL	3344 4465					
SF	4344 4565					
Tu	3345 3434					
Ks	5445 4665					
SJ	3234 3433					
Te	3334 2333					
Ka	2334 3222					
Ho	4335 2333					
Al	5334 3433					
Hu	4334 5554					
Ap	5434 2333					
Pi	-----					
Tn	5534 4454					
Hr	4334 4453					
Wa						
To	4455 3543					
Am	3345 3343					

TABLE 1a SUPPLEMENTARY K-INDICES, 1951

SM

	Jan.	Febr.	March	Apr.	May	June
1	2223 3222	5432 3233	3323 4232	2223 3223	4334 2345	2433 3323
2	3343 4352	2222 2222	----- -232	2333 3434	5344 5454	2334 4332
3	3332 4322	2222 2222	1343 3232	5434 3453	4333 4442	5232 3232
4	2222 2222	2232 3222	1323 2233	4443 3534	3333 4242	2222 3323
5	3223 4333	2322 4444	1222 3231	3433 3344	2333 4334	3333 3222
6	2223 3222	5433 2222	2344 3322	3333 3453	3443 2332	3354 3322
7	2213 3222	2222 3232	3324 4454	4433 4333	2322 3223	3432 2212
8	2222 3222	3222 3454	3234 4453	4342 3244	2322 3222	3432 3323
9	2322 2222	3332 4434	4----- 4334	3343 3232	2333 4336	3323 3221
10	2223 3443	4342 3235	5544 4343	4233 2223	3354 4422	2223 3222
11	3223 4344	4323 3334	4434 3352	3232 3212	2233 3222	2332 3332
12	4333 3222	4533 3352	3334 4243	3232 3222	3323 3332	4342 4232
13	3432 2243	4333 3343	3335 4465	3333 3323	2233 2232	2242 3222
14	3333 3332	3233 2243	4443 3323	3323 3222	3442 4234	1223 4253
15	4422 3344	2222 2223	5333 3232	2223 2232	4343 4322	432- -4-
16	4223 3344	22-2 2222	1234 3243	2121 2223	3333 3222	4233 322-
17	3333 3222	2222 2--2	2244 4442	3223 2222	3534 4323	2-23 43-3
18	2222 3323	3233 2232	3333 4233	2234 3553	4332 3222	5345 3322
19	3223 3223	2234 3323	3223 3232	5123 3212	3232 3222	3643 3222
20	2--2 2222	3322 2222	2224 4322	2333 3353	232- 2222	2222 2322
21	2123 3444	3233 3---	2232 2222	5435 3322	23-- -212	2243 2222
22	4444 3---	4--- ----	2334 4544	3433 3443	2312 3232	3222 3222
23	4333 3344	5353 4456	3424 3254	3432 3222	2333 2354	3222 3222
24	2323 3332	5443 4423	3223 2242	2443 3332	3333 4223	2223 3322
25	2223 2332	4333 3324	3325 3332	5544 3333	2232 2222	2243 3334
26	2223 3433	2333 4342	3233 3344	6322 3322	4232 3433	3432 4232
27	3332 3433	6453 3433	3423 3322	2222 3322	5434 4222	3232 4322
28	3323 3443	4654 2324	2223 2321	3223 3222	2333 4222	2333 4222
29	2333 3423		2453 4334	3322 2422	1343 3324	2222 3222
30	2322 3332		4224 2222	2223 3222	3344 5232	2332 3232
31	4453 4443		2232 2322		2433 4322	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4323 2234	3332 2435	2232 3223	2222 3323	2223 3322	3233 3333
2	5746 4334	4432 3323	3220 2110	4433 4323	2433 4433	3323 2233
3	3442 2323	3233 3322	2231 3332	2223 4233	3444 3345	3--- 2234
4	5443 3233	----- 3334	2322 3232	1232 2223	4533 3324	3333 4444
5	3342 3221	4233 2322	2222 3343	3222 3223	3332 3224	4--- 2223
6	2322 4322	2233 3322	3244 2232	2222 3222	3333 3362	1222 3222
7	2232 3222	2332 3423	3223 2343	2233 4465	5533 3333	2222 3333
8	3232 3333	2333 2322	1223 3332	6665 5445	4222 2232	4244 4453
9	3332 4422	3234 3323	3223 3342	4434 3336	2443 4323	3534 4552
10	3234 3322	2233 4422	4453 3242	4444 4544	2222 3222	2333 3445
11	2223 2222	2333 4322	4233 3455	4333 4331	2122 3222	4444 3332
12	2332 3422	3334 4433	4533 3234	2323 4432	4333 3433	3232 32--
13	3222 2231	3552 3342	3432 4245	3444 4336	3335 4355	2322 2222
14	2233 2212	2123 3223	5443 2232	4332 3442	4433 4454	2222 2335
15	2233 3334	3233 5243	3453 3342	3233 3245	5322 3333	4233 4343
16	3353 4442	2334 4232	3544 3356	3334 3335	4233 2322	3232 2223
17	2343 4342	2133 3323	4334 3345	4644 5465	3323 3364	2232 3344
18	2443 4333	3332 3222	3434 3432	3344 4444	2223 2222	4332 3334
19	2233 4232	2233 3322	2244 5753	5343 4455	2323 2223	3333 4434
20	3333 4232	5653 4344	3456 4465	5332 3253	3322 2345	4423 3222
21	4233 3332	5433 3445	3555 4355	3334 3342	2222 3222	2222 3334
22	2444 3423	5443 4332	4544 4354	4322 3344	4222 3333	2533 3465
23	4433 3233	3233 4336	5545 4465	2333 3233	3222 33--	4323 3222
24	2333 3231	4332 4234	3533 3353	2222 3212	---2 3433	2222 2222
25	2223 3323	3555 3452	3444 5577	2222 3212	---- 3424	2222 2212
26	2453 3432	4342 4245	7733 2432	1223 3325	2222 3322	1222 3321
27	4243 4322	3343 5354	5444 3333	3333 4212	2222 3222	2433 3223
28	3434 4332	3343 5252	4335 2432	1335 6683	2322 3335	4775 5453
29	3343 3232	3233 4333	3235 5454	3223 4222	4323 3333	3222 2222
30	3333 4233	2223 4322	2244 4331	2333 3221	4332 3232	2222 2223
31	4544 3345	2233 3334		1123 2222		2334 3355

TABLE 1a SUPPLEMENTARY K-INDICES, 1951

	Ci: Oct.	Ci: Nov.	Ci: Dec.	Wa: Dec.
1	2122 2222	0012 1223	2223 2222	4323 3322
2	3333 1223	3323 3323	3311 1233	3412 1331
3	1133 2221	3333 3235	3212 2134	3321 1233
4	1133 1222	4432 3334	3323 4344	4443 4555
5	3123 2322	3232 1123	3302 3323	3333 3312
6	2123 2111	1332 2363	1000 0132	3322 1121
7	2223 2465	4433 2322	2102 3433	2233 4422
8	5554 4434	3111 1122	5335 3464	4346 4554
9	3224 4325	1323 3422	3423 5543	4446 5543
10	4334 3544	1111 1100	1233 3444	4343 5433
11	4233 3331	0000 2133	4333 3434	3343 3422
12	1113 3322	4333 5551	2111 2223	2232 3122
13	2324 2245	2234 4445	1211 1011	3222 2012
14	4233 1444	4333 3454	1211 0045	4331 1124
15	----- 1223	4323 3333	3224 3252	4433 4352
16	3333 2334	3322 2321	2321 1123	4231 1222
17	4555 4665	2221 2264	3211 3343	3323 3545
18	4354 3534	2212 1111	3311 3334	3433 4434
19	5433 3555	0210 0123	3222 4334	3434 4434
20	4333 3352	3211 2344	4322 2121	3223 3221
21	3322 2232	2210 1122	1000 0114	2221 1213
22	3322 3443	4221 2344	2421 3554	3324 3553
23	3212 1222	3211 3343	3323 2221	4433 2212
24	2222 1122	3210 3422	2000 0011	2232 0112
25	2000 0100	2212 2434	1000 1112	3231 1123
26	0000 1225	2211 2242	0000 0000	3222 1012
27	3311 3011	1111 1112	0213 3124	2324 4135
28	0223 6765	2222 4134	3554 3443	5756 5533
29	3221 1201	3214 2433	3100 3320	2431 4211
30	1223 2110	4222 4222	0002 1224	2323 3223
31	0010 1000		4333 4455	5444 4545

TABLE 3a SUPPLEMENTARY MAGNETIC CHARACTER-FIGURES C, 1951

	Ci: Oct.	Ci: Nov.	Ci: Dec.	Wa: Dec.
1	0	0	0	0
2	1	1	0	0
3	0	1	0	0
4	0	1	1	1
5	0	0	0	0
6	0	1	0	0
7	2	0	0	0
8	1	0	2	1
9	1	0	1	1
10	1	0	1	1
11	1	1	1	0
12	0	1	0	0
13	1	1	0	0
14	1	1	0	0
15	0	1	1	0
16	1	0	0	0
17	2	1	1	0
18	1	0	1	1
19	1	0	1	1
20	1	0	0	0
21	1	0	0	0
22	1	1	1	1
23	0	0	0	0
24	0	0	0	0
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	2	1	2	2
29	0	1	0	0
30	0	0	0	0
31	0		2	1

TABLE 2 MEAN K-INDICES 1951
(Based on data of Table 1)

Values Kw																			
January										Sum	February								Sum
1	2.6	2.2	2.0	1.7	2.4	2.9	2.3	2.6	18.7	4.5	3.8	2.9	3.1	2.4	1.6	3.8	3.3	25.4	
2	2.5	3.1	3.1	2.5	3.5	3.1	4.1	3.1	25.0	2.2	1.9	1.1	0.9	1.0	1.0	1.3	2.1	11.5	
3	2.7	3.9	1.7	1.9	2.1	1.6	2.5	2.5	18.9	1.3	0.7	1.1	0.8	0.7	1.2	2.2	2.0	10.0	
4	1.7	1.5	1.0	0.7	0.7	2.2	1.8	2.3	11.9	0.4	0.5	1.5	3.4	2.9	2.9	2.7	2.2	16.5	
5	1.8	1.5	1.2	1.6	1.9	2.1	3.4	3.5	17.0	1.3	2.7	2.6	2.8	3.8	3.2	4.3	3.8	24.5	
6	1.8	1.6	1.0	1.0	1.2	0.8	2.3	0.7	10.4	4.9	4.7	3.5	3.5	2.0	1.9	1.7	2.2	24.4	
7	0.6	1.2	1.4	1.0	0.8	1.0	1.2	1.4	8.6	2.9	2.4	1.7	1.4	1.5	1.9	2.6	2.1	16.5	
8	1.8	0.8	2.2	2.3	2.7	2.4	1.8	1.0	15.0	2.4	1.6	1.8	2.5	2.3	4.6	4.7	3.9	23.8	
9	1.5	1.8	1.9	2.0	1.8	1.3	0.6	0.9	11.8	2.6	3.0	2.9	2.7	3.8	2.4	4.2	4.1	27.5	
10	1.2	0.9	1.0	0.8	1.2	4.1	4.2	3.3	16.7	3.3	3.2	3.4	2.5	2.6	2.2	3.6	4.6	25.4	
11	3.8	1.9	2.6	2.3	1.7	2.4	3.6	4.0	22.3	4.0	3.0	2.4	2.5	2.4	4.0	3.8	4.2	26.3	
12	3.5	2.9	3.1	3.4	2.6	2.6	2.4	1.9	22.4	4.2	4.3	2.9	3.0	3.3	3.8	4.6	3.9	30.0	
13	2.9	3.1	3.2	2.2	1.5	1.3	3.8	3.0	21.0	3.4	2.9	2.5	3.3	3.3	2.9	3.3	3.3	24.9	
14	2.7	2.3	2.5	2.4	3.2	2.8	2.9	3.1	21.9	2.3	1.9	1.7	1.9	1.8	1.9	3.6	2.7	17.8	
15	3.5	3.2	2.4	2.3	3.0	2.4	3.3	3.9	24.0	1.6	1.2	1.0	1.2	1.6	0.9	1.2	2.6	11.3	
16	3.0	1.4	2.1	2.8	3.6	3.5	3.5	4.1	24.0	0.7	0.5	0.5	0.5	0.6	0.6	1.4	1.0	5.8	
17	3.2	2.9	2.3	1.5	1.1	1.1	1.5	1.4	15.0	0.7	0.3	0.5	0.5	1.2	1.2	2.9	2.4	9.7	
18	1.1	1.4	1.1	1.3	2.2	2.0	0.9	2.6	12.6	2.9	1.3	1.6	2.8	2.6	2.4	3.1	2.1	18.8	
19	3.1	2.0	2.1	2.0	2.9	2.3	3.3	4.2	21.9	1.2	2.0	1.7	3.2	2.5	2.2	2.1	3.2	18.1	
20	3.4	1.7	1.2	1.4	2.2	2.0	1.0	1.1	14.0	2.3	1.7	0.8	1.8	1.3	0.5	0.9	0.9	10.2	
21	0.9	0.6	1.1	2.7	3.6	4.6	3.8	4.4	21.7	1.5	1.7	1.8	1.8	2.1	2.8	3.1	2.9	17.7	
22	4.2	3.8	4.2	3.4	4.4	4.4	5.1	5.2	34.7	3.6	3.3	4.1	3.9	4.4	4.5	4.4	4.6	32.8	
23	3.8	2.3	2.8	3.2	3.1	3.2	3.7	3.1	25.2	4.7	3.9	4.9	4.7	4.6	4.4	5.0	5.3	37.5	

TABLE 2 MEAN K-INDICES 1951
(Based on data of Table 1)

V a l u e s Kw																			
May										Sum	June								Sum
1	3.4	4.0	4.2	4.1	2.9	4.1	5.4	6.2	34.3	2.4	2.8	2.6	2.8	3.6	3.6	3.5	2.9	24.2	
2	5.7	2.4	3.7	4.3	4.6	4.7	4.8	4.8	35.0	2.1	3.4	3.3	3.2	3.6	3.2	3.6	3.3	25.7	
3	3.8	2.2	3.0	3.0	3.3	4.0	4.2	4.0	27.5	4.2	2.4	1.9	1.8	3.1	1.2	1.6	1.6	17.8	
4	4.5	3.3	2.9	3.6	3.5	3.5	3.5	2.5	27.3	1.5	1.6	2.1	1.7	2.5	3.0	2.0	2.8	17.2	
5	1.3	2.1	2.0	2.1	1.3	1.5	1.7	3.1	15.1	2.8	2.7	1.8	1.4	2.1	2.6	2.3	2.3	18.0	
6	3.2	3.0	3.6	1.4	2.2	2.3	2.9	1.8	20.4	2.2	2.8	4.7	4.3	3.9	2.9	2.2	1.8	24.8	
7	1.7	2.0	2.3	2.1	2.7	1.7	2.2	1.9	16.6	2.5	3.5	2.5	1.8	3.4	1.9	1.7	2.3	19.6	
8	1.1	0.7	0.9	1.2	1.8	1.7	2.2	1.1	10.7	3.1	3.6	2.6	1.9	2.9	3.7	2.9	2.7	23.4	
9	1.7	1.8	3.0	2.9	2.7	3.5	4.2	6.1	25.9	3.5	2.7	1.8	2.4	3.0	3.3	0.5	0.9	18.1	
10	3.3	3.9	4.4	4.3	5.4	4.8	3.5	2.2	31.8	1.0	0.7	0.8	2.4	3.1	2.5	2.1	1.5	14.1	
11	2.5	2.4	3.1	3.7	4.0	2.8	2.8	3.4	24.7	2.1	2.5	1.7	2.3	2.2	3.1	3.1	2.8	19.8	
12	3.4	3.0	2.7	2.0	2.2	4.1	3.3	1.4	22.1	3.4	2.4	3.1	2.7	2.5	2.3	2.9	2.5	21.8	
13	1.4	1.0	1.4	1.6	0.9	1.1	1.5	2.3	11.2	2.5	1.6	3.0	2.8	3.5	1.7	1.8	2.2	19.1	
14	2.8	3.0	2.4	2.1	1.1	2.2	3.1	3.9	20.6	0.9	1.1	0.4	1.2	0.9	3.7	4.6	4.7	17.5	
15	3.9	3.1	2.5	2.5	2.8	2.7	2.7	2.8	23.0	3.6	2.9	3.3	2.8	3.8	3.4	3.5	3.0	26.3	
16	3.8	3.8	2.8	3.1	2.6	2.5	2.5	2.9	24.0	3.6	2.3	2.7	3.0	2.8	3.0	2.8	2.5	22.7	
17	3.7	3.8	3.2	3.6	3.5	3.5	3.2	3.4	27.9	2.3	1.5	1.3	1.0	0.8	4.3	3.6	6.3	21.1	
18	3.9	3.7	2.3	2.8	1.9	2.4	1.8	2.4	21.2	5.9	5.3	5.1	3.8	3.3	3.5	2.1	3.2	32.2	
19	2.6	2.5	2.3	1.8	2.4	1.6	1.7	1.9	16.8	3.1	5.2	4.2	4.2	2.8	4.3	2.4	2.0	28.2	
20	1.8	2.0	1.7	1.7	2.0	1.1	1.7	1.3	13.3	2.9	1.4	1.1	1.8	1.7	1.2	0.9	3.3	14.3	
21	1.0	0.9	0.9	1.1	1.1	1.0	1.4	1.6	9.0	2.0	2.3	3.3	1.6	2.6	2.6	1.5	1.8	17.7	
22	2.4	1.3	0.7	1.1	2.3	2.3	1.3	1.0	12.4	1.8	1.7	1.5	2.4	2.4	2.0	2.1	2.2	16.1	
23	2.3	2.1	2.2	3.9	3.6	2.9	4.9	4.0	25.9	2.7	1.9	1.7	1.0	1.2	1.3	1.3	1.6	12.7	
24	3.7	2.6	2.1	2.5	2.7	3.4	2.3	2.5	21.8	1.5	1.3	1.1	2.4	2.1	1.1	2.1	2.2	13.8	
25	1.7	1.9	2.4	1.8	2.1	1.6	2.8	3.5	17.8	2.4	3.4	3.5	3.7	4.5	4.5	3.8	3.3	29.1	
26	3.3	1.9	1.8	3.0	3.3	5.1	4.6	5.6	28.6	3.0	3.2	2.8	2.4	2.4	1.9	2.3	1.7	19.7	
27	4.8	4.6	2.6	3.2	1.8	1.5	1.3	1.8	21.6	2.0	2.5	3.4	1.6	2.3	3.7	2.1	2.6	20.2	
28	2.0	2.6	2.2	1.8	1.7	1.6	0.9	0.4	13.2	2.6	2.6	2.8	2.5	2.8	2.2	2.1	2.9	20.5	
29	0.8	1.5	3.4	2.4	3.2	2.6	1.7	3.2	18.8	2.6	2.2	1.3	1.8	2.9	2.3	3.1	2.4	18.6	
30	1.4	1.0	2.5	3.9	3.7	2.1	1.8	2.2	18.6	2.5	2.6	2.5	2.4	2.0	1.8	2.7	1.4	17.9	
31	2.1	2.3	1.5	3.1	1.9	1.2	2.4	2.9	17.4										
July										August									
1	3.2	1.7	1.0	2.4	2.8	3.5	4.1	5.7	24.4	3.7	2.6	1.7	3.1	2.6	5.0	4.8	5.0	28.5	
2	6.0	6.1	5.5	4.9	3.6	4.0	3.4	3.8	37.3	4.5	4.6	3.2	2.6	2.4	2.7	2.4	2.6	25.0	
3	3.4	3.3	2.9	3.4	4.0	3.6	3.6	3.8	28.0	2.6	1.9	1.7	2.6	2.6	1.6	1.6	2.2	16.8	
4	3.5	4.1	3.4	2.4	2.3	2.6	2.6	3.1	24.0	3.2	3.1	1.5	1.6	3.1	2.9	3.1	3.4	21.9	
5	3.0	2.6	2.8	2.5	2.8	2.0	1.7	1.9	19.3	3.8	2.6	1.8	1.7	2.3	3.0	2.4	2.4	20.0	
6	1.4	1.8	2.0	2.3	2.7	3.1	2.6	2.2	18.1	2.7	0.6	1.6	1.5	2.8	3.2	1.8	2.6	16.8	
7	1.6	1.6	1.7	1.4	1.5	2.7	2.2	2.9	15.6	1.5	2.9	2.0	2.7	1.6	2.0	2.6	3.1	18.4	
8	2.6	1.8	1.2	1.5	1.3	1.9	2.4	3.0	15.7	2.1	2.1	1.8	1.4	1.6	1.4	1.8	2.1	14.3	
9	3.4	3.5	2.0	2.0	2.4	3.2	3.2	2.1	21.8	1.4	1.6	2.2	2.7	3.0	2.3	2.3	3.0	18.5	
10	2.5	1.7	2.3	1.7	1.6	1.6	2.5	1.6	15.5	1.6	1.9	2.4	2.5	3.1	1.5	2.0	2.3	17.3	
11	0.9	1.3	2.2	2.3	2.8	2.6	2.3	1.7	16.1	2.2	2.3	2.5	2.9	3.5	2.8	2.9	3.2	22.3	
12	1.7	1.8	1.3	1.6	2.0	2.4	1.4	2.1	14.3	3.3	2.8	3.1	3.1	3.2	2.7	3.1	3.4	24.7	
13	2.9	2.3	1.7	1.9	1.4	1.4	1.4	1.5	14.5	2.3	4.6	4.5	3.7	4.4	4.5	4.6	2.2	30.8	
14	1.7	1.3	1.6	2.0	1.7	1.5	1.4	2.3	13.5	1.4	1.2	1.1	2.8	2.3	2.4	2.6	3.1	16.9	
15	2.0	1.4	1.9	1.4	2.3	2.9	3.0	4.7	19.6	3.2	2.2	2.9	1.6	2.4	2.9	4.4	3.3	22.9	
16	2.7	3.2	1.7	3.6	4.1	3.8	3.2	2.4	24.7	1.7	2.8	4.6	5.0	3.1	2.7	1.9	3.1	24.9	
17	2.7	2.3	3.5	3.9	3.1	3.6	3.4	2.5	25.0	3.2	2.1	2.8	1.6	2.6	4.0	2.9	2.9	22.1	
18	2.5	3.1	3.2	3.2	3.9	4.0	2.9	2.9	25.7	2.4	2.1	2.1	0.7	1.1	1.1	0.8	1.3	11.6	
19	1.8	1.9	2.6	3.1	2.0	2.7	2.5	1.7	18.3	0.8	1.6	2.7	2.8	3.0	3.1	2.7	2.1	18.8	
20	2.7	2.6	2.3	2.2	2.5	2.1	1.3	1.4	17.1	4.7	4.4	4.3	3.6	3.4	3.1	4.1	3.9	31.5	
21	2.4	2.2	2.7	2.1	1.9	2.2	1.4	1.0	15.9	5.1	3.6	3.8	4.1	4.3	4.8	4.2	4.5	34.4	
22	1.6	3.7	4.7	3.6	3.0	3.9	3.4	3.6	27.5	4.8	4.3	4.5	3.4	4.1	2.7	3.5	2.6	29.9	
23	4.6	3.0	3.3	3.5	2.1	1.9	2.4	2.4	23.2	2.9	2.1	2.7	2.9	2.9	3.9	3.4	5.2	26.0	
24	1.7	2.1	2.4	2.0	2.6	1.7	1.2	1.1	14.8	3.7	3.9	3.5	3.5	3.1	2.4	3.1	3.3	26.5	
25	0.8	2.1	2.8	2.9	2.9	3.0	3.1	2.8	20.4	3.1	4.5	4.8	4.3	3.0	4.4	4.5	2.1	30.7	
26	2.8	4.0	4.1	3.8	3.6	4.6	2.4	3.9	29.2	3.9	3.6	4.4	3.8	3.4	3.3	3.8	4.2	30.4	
27	4.1	3.0	3.3	3.2	2.0	2.4	2.4	3.3	23.7	2.4	3.1	3.4	3.2	3.2	3.9	4.3	4.2	27.7	
28	3.8	4.3	3.5	4.1	3.1	4.1	4.2	3.1	30.2	2.6	2.9	2.7	3.3	2.9	2.3	3.6	3.6	23.9	
29	2.8	3.5	2.8	3.1	2.7	2.6	2.3	2.3	22.1	3.0	2.7	2.5	2.9	3.0	3.1	1.8	2.5	21.5	
30	2.2	2.0	1.8	2.9	2.8	2.6	3.3	3.4	21.0	1.1	1.3	0.8	1.8	2.5	2.9	2.8	2.8	16.0	
31	3.3	4.1	3.8	3.7	4.5	4.6	4.1	4.3	32.4	1.9	1.4	3.1	2.7	3.7	3.3	2.5	3.6	22.2	

TABLE 2 MEAN K-INDICES 1951
(based on data of Table 1)

V a l u e s K w																			
September									Sum	October									Sum
1	2.1	1.6	1.3	1.2	1.8	1.4	0.9	2.6	12.9	2.1	1.3	1.3	1.4	1.0	2.5	2.4	2.1	14.1	
2	2.2	1.5	1.1	1.1	1.2	1.4	1.0	1.7	11.2	3.1	3.2	3.0	2.2	1.7	1.9	1.6	3.0	19.7	
3	2.1	1.6	1.9	2.4	2.5	1.2	1.2	2.7	15.6	1.4	1.2	0.8	2.1	2.4	1.1	2.6	2.2	13.8	
4	2.0	2.7	1.4	1.1	2.0	1.8	2.0	2.2	15.2	0.7	0.6	0.4	1.0	1.0	1.4	2.2	1.9	9.2	
5	2.3	1.4	1.7	2.2	1.8	1.7	3.7	3.8	18.6	2.4	0.7	0.8	0.6	0.8	1.0	1.9	1.9	10.1	
6	3.7	2.0	3.7	3.4	2.4	2.0	3.7	3.1	24.0	1.5	0.8	0.6	0.8	0.4	0.2	0.3	0.6	5.2	
7	2.7	1.0	1.1	2.5	2.0	2.3	3.4	2.1	17.1	1.2	1.5	2.2	3.0	3.8	4.6	5.7	4.7	26.7	
8	1.4	1.9	2.1	1.5	2.6	3.0	2.6	2.2	17.3	5.0	4.8	5.1	4.7	4.6	4.1	3.7	4.2	36.2	
9	2.7	2.6	1.6	3.0	3.8	3.2	2.9	3.0	22.8	3.6	3.1	3.0	3.9	4.3	3.3	2.9	4.6	28.7	
10	4.1	3.8	4.4	4.2	4.3	3.2	2.9	1.6	28.5	3.9	3.7	3.1	4.4	3.6	4.8	4.2	3.9	31.6	
11	3.4	2.2	3.0	2.6	3.5	3.5	4.6	5.4	28.2	3.6	2.5	3.3	3.5	3.1	3.1	2.5	0.9	22.5	
12	3.7	3.4	3.5	3.5	4.1	3.8	3.3	4.8	30.1	1.5	2.3	2.1	3.6	3.3	2.7	2.2	2.0	19.7	
13	4.8	4.1	3.6	2.6	4.1	4.2	4.2	4.9	32.5	2.5	2.9	3.2	4.3	3.0	2.1	3.6	4.8	26.4	
14	4.3	4.0	3.7	2.9	3.5	2.3	2.8	2.7	26.2	4.1	2.3	2.7	3.0	1.4	3.3	4.4	3.3	24.5	
15	3.7	3.4	4.5	3.5	4.5	4.2	3.3	3.3	30.4	2.6	1.9	2.2	2.1	1.4	1.3	3.1	3.5	18.1	
16	3.9	5.2	4.5	5.3	5.2	5.2	4.9	5.8	40.0	3.0	3.2	2.7	3.3	2.6	3.2	3.7	4.3	26.0	
17	4.8	3.7	3.8	4.1	4.4	4.3	2.8	5.1	33.0	4.9	5.1	4.6	4.8	4.5	5.8	5.5	4.6	39.8	
18	4.0	3.8	2.6	3.2	2.3	4.3	4.0	2.8	27.0	3.9	4.0	4.6	4.2	3.9	4.9	3.9	4.0	33.4	
19	2.2	1.5	3.2	3.1	4.6	6.6	5.6	4.3	31.1	4.8	4.4	3.7	3.5	3.8	4.1	4.6	4.9	33.8	
20	3.9	4.8	5.4	5.6	5.3	5.2	5.6	5.2	41.0	4.8	2.6	3.4	3.2	3.0	2.2	4.0	2.1	25.3	
21	5.1	5.0	4.9	5.5	4.7	4.5	4.6	4.9	39.2	2.6	3.2	2.6	3.4	2.3	2.2	2.7	2.2	21.2	
22	4.8	5.1	4.7	4.9	4.7	4.2	5.6	5.0	39.0	3.1	2.8	2.5	2.7	3.3	4.4	3.8	3.2	25.8	
23	4.7	5.0	4.2	3.5	3.9	3.7	4.6	4.1	33.7	2.5	1.6	1.8	1.9	2.5	3.0	2.2	2.6	18.1	
24	4.4	4.3	3.7	4.2	4.5	3.1	3.6	3.0	30.8	1.7	1.4	1.6	1.6	0.8	0.6	1.6	1.8	11.1	
25	3.1	3.5	3.6	4.5	5.8	6.5	6.8	7.1	40.9	1.6	0.7	0.6	0.7	0.9	0.8	1.0	1.2	7.5	
26	6.7	6.2	3.4	3.1	2.2	2.9	2.1	2.5	29.1	1.3	1.2	2.2	3.5	2.6	1.9	2.6	4.8	20.1	
27	5.0	5.0	5.3	4.9	4.1	2.8	2.9	3.3	33.3	2.9	3.1	1.9	2.1	2.4	0.8	0.3	1.4	14.9	
28	4.6	1.7	1.4	1.0	1.3	1.1	0.7	2.4	14.2	0.7	2.8	2.7	4.5	6.5	7.3	7.3	4.6	36.4	
29	2.9	1.6	2.1	1.6	4.0	5.2	4.0	3.1	24.5	3.3	2.7	2.1	2.0	2.4	1.4	1.1	1.4	16.4	
30	3.1	2.7	2.6	2.0	2.0	1.0	1.0	1.1	15.5	1.2	2.5	2.6	2.9	1.5	0.8	1.1	0.3	12.9	
31										0.3	0.9	0.7	0.6	1.1	0.6	1.2	1.5	6.9	
	November								Sum	December								Sum	
1	0.9	0.4	1.2	1.8	1.3	1.1	1.7	3.1	11.5	2.3	2.0	1.9	3.0	2.7	2.5	2.7	2.7	19.8	
2	2.8	2.9	2.4	2.3	2.9	2.8	2.5	2.9	21.5	2.4	3.2	2.4	1.8	2.2	2.7	2.9	2.3	19.9	
3	3.1	3.7	3.3	3.5	4.0	2.9	3.6	4.6	28.7	2.8	1.9	1.4	2.0	1.7	2.2	2.3	3.3	17.6	
4	3.9	4.0	3.3	2.7	3.4	3.7	2.9	3.3	27.2	3.1	3.2	2.7	3.2	4.0	4.1	4.5	4.4	29.2	
5	2.9	3.3	2.5	3.0	1.7	1.8	3.0	3.2	21.4	3.1	2.7	1.4	2.2	2.4	2.7	2.1	2.6	19.2	
6	2.0	2.1	2.4	2.4	2.8	3.1	5.0	3.2	23.0	0.9	0.7	0.9	0.6	1.0	0.9	2.7	1.8	9.5	
7	4.4	3.6	2.7	2.9	2.9	3.2	2.6	2.7	25.0	1.5	1.1	0.8	2.4	3.0	3.6	3.5	3.0	18.9	
8	3.3	1.7	1.2	1.1	1.4	0.8	2.6	1.9	14.0	5.1	3.3	3.9	4.9	4.4	4.6	5.5	4.0	35.7	
9	1.3	2.8	3.3	3.1	3.2	3.6	2.7	2.3	22.3	3.2	4.0	3.3	4.5	4.8	5.1	4.9	2.9	32.7	
10	2.1	1.7	0.8	0.7	0.9	1.0	1.1	0.4	8.7	1.9	3.4	3.8	3.9	3.6	4.5	3.7	4.0	28.8	
11	0.3	0.3	0.7	1.0	2.4	1.8	2.8	3.1	12.4	3.4	2.9	4.2	3.4	3.5	4.2	2.8	3.7	28.1	
12	4.1	2.9	3.5	3.2	3.4	4.3	1.8	2.4	25.6	1.8	1.9	2.5	2.2	2.7	1.5	1.9	2.3	16.8	
13	2.3	2.6	3.6	4.3	4.1	5.0	5.0	4.7	31.6	1.7	2.3	1.9	1.8	1.9	0.7	1.4	2.0	13.7	
14	4.7	3.4	4.0	2.8	3.9	4.2	5.3	4.3	32.6	1.7	2.1	1.4	1.0	0.6	1.0	3.2	4.4	15.4	
15	3.5	3.6	3.1	3.5	3.5	3.9	3.1	3.0	27.2	3.9	2.4	2.6	3.2	3.1	3.0	4.8	2.8	25.8	
16	2.7	2.4	1.8	2.4	2.6	3.0	2.3	1.5	18.7	2.6	2.7	2.2	1.9	1.8	2.1	2.1	2.5	17.9	
17	1.4	2.0	2.4	2.3	2.2	2.8	5.5	4.1	22.7	1.9	2.7	1.3	2.1	3.2	4.0	4.3	3.9	23.4	
18	2.8	1.7	1.8	2.3	1.6	0.9	2.0	1.9	15.0	3.4	3.6	2.8	2.3	2.8	3.5	3.2	4.4	26.0	
19	1.1	2.2	1.3	0.9	1.5	2.0	2.3	2.8	14.1	3.1	2.4	2.6	3.6	3.9	4.0	3.2	4.0	26.8	
20	2.5	2.0	1.1	1.1	1.8	3.2	3.9	3.9	19.5	3.2	3.1	2.2	3.2	2.1	1.8	2.3	2.1	20.0	
21	2.2	2.4	1.5	1.4	1.5	0.9	3.0	3.0	15.9	1.8	1.2	1.1	1.2	1.4	1.7	1.5	3.6	13.5	
22	3.3	1.6	1.6	2.1	2.3	2.5	3.6	3.5	20.5	2.7	3.8	2.0	3.5	3.5	5.3	5.1	4.2	30.1	
23	3.1	2.3	1.6	2.3	3.1	3.8	4.1	3.3	23.6	4.1	3.0	2.0	3.4	2.0	2.4	2.1	1.1	20.1	
24	2.8	2.3	1.7	1.5	3.5	4.1	2.3	1.9	20.1	1.4	0.6	0.4	0.7	0.5	0.7	1.9	1.5	7.7	
25	2.6	1.8	2.4	2.5	2.9	3.6	2.8	4.2	22.8	1.3	0.9	0.7	1.3	1.1	1.2	0.9	1.6	9.0	
26	2.1	1.6	1.3	1.5	3.6	2.5	3.6	1.9	18.1	0.5	0.3	0.8	1.2	1.1	0.8	1.1	0.6	6.4	
27	1.9	1.5	1.3	1.7	1.4	1.3	1.6	2.4	13.1	0.8	2.7	1.6	2.6	3.3	0.9	2.1	4.5	18.5	
28	2.2	1.8	2.1	2.3	3.6	3.4	3.6	4.1	23.1	3.6	6.1	5.8	5.0	5.6	4.6	4.0	2.9	37.6	
29	3.2	2.8	2.5	3.5	3.9	3.9	3.4	3.3	26.5	2.6	1.3	0.8	1.3	3.1	2.5	1.8	1.2	14.6	
30	3.1	1.6	2.8	1.9	3.4	2.5	2.7	1.9	19.9	0.6	0.7	1.1	2.6	2.4	1.7	1.9	3.6	14.6	
31										3.3	2.7	3.6	4.4	3.7	4.4	4.7	4.1	30.9	

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

January

D a y																																	Sum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Tr	1	2	1	0	2	0	0	1	0	1	2	1	2	2	1	2	1	1	2	1	2	2	2	1	0	1	1	2	1	1	2	38	
Co	0	1	1	0	0	0	1	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	23	
So	1	2	1	1	2	0	0	1	0	1	2	1	1	1	1	2	2	1	2	1	2	2	2	1	1	2	1	2	1	1	2	40	
Le	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	2	1	1	0	1	1	1	1	1	25		
Do	1	1	1	0	1	0	0	0	0	1	2	1	1	1	1	1	1	0	2	1	1	2	1	1	0	0	1	1	2	1	2	28	
Me	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	0	1	2	1	1	1	1	1	1	1	1	1	2	25	
Si	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	2	6	
Es	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	24	
Lo	1	2	2	1	2	1	0	1	0	2	2	1	2	1	2	2	1	1	2	2	2	2	2	2	1	1	2	1	2	1	2	46	
RS	1	2	2	1	2	1	0	1	0	2	2	1	1	1	2	2	1	1	2	1	2	2	2	2	1	1	2	1	2	1	2	44	
Ag	1	1	1	0	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	2	1	1	0	1	1	1	1	1	2	27	
Wn	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	1	0	1	2	1	0	0	1	1	1	0	1	1	19	
Wl	1	2	1	1	2	1	0	1	1	2	2	1	1	1	2	2	1	1	2	1	2	2	2	1	1	1	2	1	2	1	2	44	
Ab	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	30	
Ni	0	1	0	0	1	0	0	0	0	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	17	
Ma	1	2	1	0	1	1	0	1	0	2	2	1	2	1	2	2	1	1	2	1	2	2	2	2	1	1	2	1	2	1	2	41	
Sw	1	2	1	0	1	0	0	0	0	1	1	1	1	1	1	1	2	1	1	1	2	2	2	1	1	1	1	1	1	1	2	32	
Na	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	2	31	
CF	1	1	1	0	1	0	0	1	0	1	1	1	1	1	1	1	0	0	1	0	2	2	1	1	0	1	1	1	1	1	2	26	
Ch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	
Fu	1	1	0	0	1	0	0	0	0	1	1	1	0	1	1	1	0	0	1	0	1	2	1	0	0	1	0	1	0	1	2	19	
SM	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	0	0	0	1	2	1	1	0	1	1	2	1	2	26	
Eb	1	1	1	1	1	1	0	1	0	2	2	1	1	1	1	1	1	1	2	1	2	2	1	1	0	2	1	1	1	1	2	36	
TL	1	1	1	0	1	0	0	1	0	2	2	1	1	1	1	1	1	0	2	1	2	2	1	1	1	0	2	1	1	1	1	32	
SF	0	1	0	0	0	0	0	0	-	1	1	1	1	1	1	1	-	-	0	1	0	1	2	1	0	0	1	1	-	0	1	17	
Tu	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	1	0	0	15	
Ks	1	2	1	0	1	1	0	1	0	2	2	1	1	1	1	2	2	0	1	2	1	2	2	2	1	0	2	1	2	1	2	39	
SJ	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	1	0	1	1	1	0	0	0	1	1	0	1	13	
Te	-	-	1	1	1	0	0	1	0	1	2	2	2	2	2	2	2	1	0	2	2	2	2	2	1	0	1	2	2	1	1	2	38
He	1	2	1	0	1	0	0	1	0	2	1	1	1	1	1	1	1	0	0	1	0	2	2	1	0	0	2	1	1	1	2	28	
Ka	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	29	
Ta	1	1	1	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	1	2	1	1	0	0	2	0	1	0	1	2	19	
Ho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	
Al	0	1	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	2	1	1	0	0	1	1	1	1	2	2	26	
Hu	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	1	8	
Va	-	1	1	0	1	0	0	0	0	0	1	1	1	0	0	1	1	0	0	1	0	1	1	0	-	1	1	1	0	1	1	17	
EL	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	6	
Ap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	
Pi	1	1	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	2	1	1	2	1	0	0	2	1	0	0	1	1	19	
Tn	1	1	0	0	1	0	-	1	0	1	2	1	1	1	1	1	0	0	1	0	2	1	1	0	0	1	1	1	1	1	2	24	
Hr	0	1	0	0	0	0	0	0	0	1	1	1	0	1	1	1	0	0	1	0	1	2	1	1	0	0	1	1	0	1	1	17	
Wa	0	1	1	0	0	0	0	0	1	1	1	0	1	1	1	1	0	0	0	0	0	0	1	1	0	0	1	0	1	1	0	16	
To	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0	1	1	-	1	29	
Am	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	
Σ	254	529	831	8	122	74	54	93	36	364	544	21	144	724	547	04	922	124	935	452	64	169										1048	

Selected Days: Five quiet 4, 6, 7, 9, 18

Five disturbed 2, 21, 22, 23, 31

Ten quiet 4, 6, 7, 8, 9, 17, 18, 20, 24, 25

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

February

D a y																													Sum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Tr	2	0	0	2	2	2	2	2	2	2	2	2	2	1	1	0	1	2	1	0	1	2	2	2	2	1	2	2	42
Co	1	0	0	1	1	1	0	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	2	2	1	1	1	1	23
So	2	0	0	2	2	2	1	2	2	2	2	2	2	2	0	0	1	1	1	1	1	2	2	2	2	2	2	2	42
Le	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	1	1	2	1	1	1	2	25
Do	2	0	0	1	2	2	1	2	2	2	2	2	2	1	1	0	1	1	1	1	0	1	2	2	2	1	1	2	37
Me	1	0	0	1	1	2	0	1	1	1	1	1	1	1	0	0	0	0	1	1	0	1	2	2	2	1	1	2	26
Si	1	0	0	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	2	1	1	1	1	18
Es	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	1	1	2	1	1	1	1	23
Lo	2	0	0	2	2	2	1	2	2	2	2	2	2	1	2	1	0	2	1	2	1	2	2	2	2	2	2	2	45
RS	2	1	0	2	2	2	1	2	2	2	2	2	2	2	2	1	0	1	1	1	1	2	2	2	2	2	2	2	45
Ag	1	0	0	1	1	2	1	1	1	1	1	1	2	1	1	0	0	0	1	1	1	1	1	2	2	1	1	2	29
Wn	1	0	0	0	1	1	0	1	1	1	1	1	2	1	1	0	0	0	0	0	0	0	0	2	2	1	1	2	22
Wi	2	1	0	2	2	2	1	2	2	2	2	2	2	2	2	1	0	1	1	1	1	1	2	2	2	2	2	2	44
Ab	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	2	2	1	1	1	2	29
Ni	1	0	0	0	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	17
Ma	2	0	0	1	2	2	1	2	2	2	2	2	2	1	1	0	0	1	1	1	0	1	2	2	2	1	1	2	36
Sw	1	0	0	1	1	1	1	2	2	1	1	2	1	1	1	0	0	1	1	1	0	1	2	2	2	1	1	2	31
Na	1	0	0	1	1	1	1	1	1	2	2	2	2	1	1	1	0	1	1	1	0	1	2	2	2	1	1	2	32
CF	1	0	0	1	1	1	1	1	1	2	1	2	1	1	1	0	0	0	1	1	0	1	2	2	2	1	1	2	29
Ch	0	0	0	0	0	1	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	10
Fu	1	0	0	1	1	1	0	1	1	1	1	1	2	1	1	0	0	0	0	0	0	0	2	2	2	1	1	2	22
SM	1	0	0	0	1	2	0	2	1	1	2	2	1	1	0	0	0	0	0	1	0	1	-	2	2	1	1	2	26
Eb	2	0	0	1	2	2	1	2	2	2	2	2	2	1	1	1	0	1	1	1	1	1	2	2	2	1	2	2	39
TL	2	0	0	1	2	2	1	2	2	2	2	2	2	1	1	0	0	0	1	1	1	1	2	2	2	1	1	2	36
SF	1	0	0	0	1	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	-	-	1	1	0	2	15
Tu	1	0	0	0	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	1	1	1	1	17
Ks	2	0	0	1	2	1	0	2	2	2	2	2	2	2	2	1	0	0	1	0	0	1	2	2	2	1	1	2	35
SJ	1	0	0	0	1	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	13
Te	2	0	0	1	2	2	1	1	2	2	2	2	2	2	1	0	0	0	0	0	0	0	1	2	2	2	2	2	35
He	2	0	0	1	2	2	1	2	2	2	2	2	2	1	1	0	0	0	1	0	0	1	2	2	1	2	1	2	34
Ka	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	2	26
Ta	1	0	0	1	1	1	0	2	2	1	1	1	1	1	0	0	0	0	1	1	0	1	2	1	1	1	1	2	23
Ho	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	8
Al	1	0	0	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	0	0	1	2	2	1	1	1	2	24
Hu	0	0	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	10
Va	1	0	0	0	1	1	0	1	1	1	1	-	1	0	0	0	0	0	0	0	1	0	1	1	1	1	0	1	15
EL	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	9
Ap	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	6
Pi	2	1	0	0	2	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	16
Tn	2	0	0	1	2	1	0	2	1	1	1	1	1	1	1	0	0	0	1	1	0	1	2	2	1	1	1	2	28
Hr	1	0	0	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	1	2	1	1	1	22
Wa	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	7
To	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	1	1	2	1	1	1	2	23
Am	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	5
Σ	52	5	0	34	55	56	21	51	52	54	52	58	39	31	9	11	22	26	27	93	16	57	26	244	38	72	71	1099	

Selected Days: Five quiet 2, 3, 15, 16, 20

Five disturbed 22, 23, 24, 27, 28

Ten quiet 2, 3, 4, 7, 15, 16, 17, 18, 20, 21

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

March

D a y																																	Sum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Tr	2	1	0	1	1	2	2	2	2	2	2	2	2	2	1	2	1	1	1	1	1	1	2	2	2	2	2	0	2	1	1	47	
Co	1	1	1	1	0	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	30	
So	1	1	0	1	0	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2	1	0	2	1	1	43
Le	1	0	0	0	0	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	0	2	1	1	1	1	1	0	1	1	1	28	
Do	0	0	0	1	0	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	2	2	2	2	2	1	1	0	2	1	0	40
Me	1	0	1	1	0	1	2	2	2	2	2	2	2	2	1	2	2	2	1	1	1	2	1	1	1	1	1	0	2	1	1	41	
Si	1	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	1	1	1	1	1	0	0	1	0	0	18	
Es	1	1	1	0	0	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	0	2	1	1	1	1	1	0	1	1	1	30	
Lo	2	1	1	1	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	2	2	53	
RS	1	1	1	1	0	1	2	2	2	2	2	2	2	2	2	2	2	1	1	2	1	2	2	2	2	2	2	1	1	2	1	1	48
Ag	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	27	
Wn	1	0	0	0	0	0	1	2	1	1	1	1	2	2	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	1	0	0	22
Wi	1	1	1	1	0	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	1	0	2	2	1	47
Ab	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	32
Ni	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	1	0	0	1	19
Ma	1	1	1	0	0	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	0	2	1	1	1	1	0	1	0	1	0	37
Sw	1	1	1	0	0	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	36
Na	1	1	1	1	0	1	1	2	2	2	1	1	2	1	1	1	1	1	1	1	0	2	1	1	1	1	1	0	1	1	1	1	33
CF	1	1	1	1	0	1	2	2	1	2	2	1	2	2	1	1	1	1	0	1	0	2	1	1	1	1	1	0	1	1	1	1	34
Ch	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	12
Fu	0	0	0	0	0	0	1	2	2	1	1	1	1	2	1	0	0	1	1	0	1	2	1	1	1	0	0	0	0	1	0	0	22
SM	1	1	1	0	0	1	1	2	1	1	1	1	2	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	1	0	0	0	26
Eb	1	1	1	1	0	2	2	2	1	2	2	1	2	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	2	1	40
Tl	1	1	1	1	0	2	2	2	1	2	2	1	2	1	2	1	1	1	1	1	1	2	2	1	1	1	1	1	0	1	1	1	38
ST	0	0	0	0	0	1	2	2	1	2	1	1	2	1	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	0	0	18
Tu	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1	0	0	21
Ks	1	1	0	1	0	1	2	2	1	2	2	2	2	2	1	2	1	1	0	1	0	0	0	1	1	1	1	0	0	2	2	1	37
SJ	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	1	1	1	0	0	0	1	0	0	0	17
Te	2	0	0	0	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	1	1	2	1	1	46
He	1	1	0	1	0	1	2	2	1	1	2	1	2	2	1	1	1	1	1	1	1	2	2	1	1	1	1	0	1	1	1	1	35
Ka	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	28
Ta	0	1	0	0	0	1	2	1	1	1	1	1	2	1	1	1	1	1	0	1	0	2	1	1	1	1	0	0	1	1	1	1	26
Ho	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	9
Al	0	0	0	0	0	1	2	1	1	1	1	1	1	1	1	1	1	1	0	1	0	2	1	1	1	1	0	0	0	1	1	1	24
Hu	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	9
Va	1	0	0	0	0	1	1	1	1	1	0	1	1	1	1	1	0	1	0	1	0	1	1	1	1	0	0	0	1	1	0	0	19
El	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Ap	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7
Pi	1	0	0	1	0	1	2	0	0	1	1	1	2	1	2	0	0	0	0	0	0	0	2	1	1	0	1	1	1	2	2	0	24
Tn	1	1	0	0	0	1	2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	0	2	1	1	1	0	0	2	1	1	1	30
Hr	1	0	0	0	0	1	2	1	1	1	1	1	2	1	1	1	1	1	0	0	0	2	1	1	1	1	0	0	1	1	0	1	24
Wa	1	0	0	0	0	1	1	1	1	1	0	1	1	1	1	0	0	1	1	0	0	1	1	0	0	0	0	0	0	1	0	0	14
To	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	2	1	1	1	28
Am	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Σ	34	19	17	18	34	16	56	35	15	59	52	52	71	60	42	34	40	40	23	31	17	67	51	45	40	40	27	55	43	22	25	1226	

Selected Days: Five quiet 2, 4, 5, 21, 28

Five disturbed 7, 10, 13, 14, 22

Ten quiet 2, 3, 4, 5, 19, 20, 21, 28, 30, 31

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

April

D a y																																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Sum		
Tr	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	1	2	0	55		
Co	1	1	2	2	1	2	1	1	1	1	1	1	1	1	0	0	1	1	1	1	2	1	1	2	1	1	1	0	0	1	0	29	
So	1	2	2	2	2	2	2	2	2	2	1	2	2	1	1	1	1	2	2	2	2	2	2	1	2	2	1	1	1	1	0	47	
Le	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	2	1	1	1	1	1	1	1	1	0	1	0	27	
Do	0	2	2	2	2	2	2	2	1	2	1	2	2	0	0	0	0	2	2	2	2	1	1	2	2	2	1	0	0	0	1	40	
Me	1	1	2	2	2	2	1	1	1	-	1	1	2	1	1	1	1	2	1	2	2	2	1	2	2	1	1	1	1	1	0	39	
Si	0	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	1	0	1	1	1	0	1	1	0	0	0	0	0	17	
Es	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1	2	1	1	1	1	1	1	1	0	0	0	0	28	
Lo	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	1	1	2	0	52	
RS	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	2	1	52	
Ag	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	2	1	1	2	2	1	1	1	1	0	38
Wn	0	1	2	2	1	2	1	1	1	1	1	1	1	2	1	0	0	0	2	1	2	1	1	0	1	1	0	0	0	1	0	27	
Wi	1	2	2	2	2	2	2	2	1	2	1	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1	48	
Ab	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	32	
Ni	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	0	1	1	1	0	0	0	0	0	20	
Ma	1	2	2	2	2	2	2	1	1	1	1	1	2	2	1	0	1	0	2	2	2	2	1	1	2	2	1	1	1	1	0	41	
Sw	0	1	2	2	2	2	1	1	1	0	1	2	1	1	0	0	0	2	1	1	1	2	1	1	2	2	1	1	0	1	0	33	
Na	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	0	34	
CF	0	2	2	2	2	2	1	1	1	1	1	1	2	1	1	0	1	2	1	2	1	1	0	2	2	0	1	1	1	1	0	35	
Ch	0	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	1	0	1	1	1	0	1	1	0	0	0	0	0	16	
Fu	0	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	2	1	1	1	1	0	1	1	0	0	0	0	0	17	
SM	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	1	0	1	1	1	0	1	1	0	0	0	0	0	18	
Eb	1	2	2	2	1	2	2	1	1	1	1	2	2	1	1	1	1	2	2	2	2	2	2	1	2	1	2	1	1	1	0	44	
TL	1	2	2	2	1	2	2	1	1	1	1	1	2	1	1	1	1	2	1	2	2	2	1	2	2	1	2	1	0	1	0	39	
SF	0	1	2	2	1	1	1	1	1	1	0	1	1	1	1	0	0	0	2	1	1	1	1	-	-	-	-	-	-	-	-	20	
Tu	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	0	1	1	0	0	0	0	0	20	
Ks	0	2	2	2	2	2	1	1	1	1	1	1	2	2	1	0	0	0	2	1	2	2	2	1	2	2	1	1	1	1	0	39	
SJ	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	1	1	1	1	1	0	1	1	0	0	0	0	0	19	
Te	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	56		
He	1	2	2	2	1	1	1	2	1	1	1	2	2	1	1	0	0	2	2	2	2	2	2	1	1	1	1	1	0	0	0	36	
Ka	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	0	28	
Ta	0	1	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	2	1	1	1	1	1	1	1	1	0	1	0	1	0	19	
Ho	0	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	1	0	1	1	0	0	0	0	0	13	
Al	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0	0	2	1	1	1	1	0	2	1	0	1	1	1	1	1	28	
Hu	0	1	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	1	0	1	1	1	0	1	1	0	0	0	0	0	14	
Va	0	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	21	
EL	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	0	28	
Ap	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	7	
Pi	1	1	1	1	1	1	1	0	1	0	1	1	1	0	0	0	0	2	1	2	1	1	0	1	1	1	1	0	0	0	0	22	
Tn	0	2	2	2	1	1	1	1	1	1	1	1	1	2	1	1	0	0	2	1	2	2	1	0	2	1	0	1	1	1	0	32	
Hr	0	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	2	1	1	1	1	0	1	1	1	0	0	0	0	0	19	
Wa	0	1	1	1	1	1	1	0	0	0	0	0	0	1	1	0	0	0	2	0	1	1	1	0	1	1	0	0	0	0	0	15	
To	0	1	2	2	2	2	1	1	1	1	1	1	1	1	1	0	1	2	1	1	2	1	1	1	1	1	1	1	1	1	0	33	
Am	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	8	
Σ	18	56	66	65	58	62	53	46	44	24	23	34	76	136	23	132	175	46	64	60	55	29	58	57	34	30	20	30	5		1305		

Selected Days: Five quiet 1, 15, 16, 28, 30

Five disturbed 3, 4, 6, 13, 18

Ten quiet 1, 11, 15, 16, 17, 23, 27, 28, 29, 30

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

May

D a y																																			Sum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
Tr	2	2	2	2	1	2	2	1	2	2	2	2	1	2	2	2	2	2	1	2	2	2	2	2	1	2	2	0	2	1	1	53			
Co	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1	1	0	1	0	0	1	0	0	1	1	0	1	1	0	21			
So	2	2	2	2	1	2	1	0	2	2	2	1	0	2	1	2	2	1	0	0	1	2	2	2	2	2	2	2	0	2	1	0	41		
Le	2	2	1	1	0	1	1	0	1	1	1	1	0	1	1	1	1	1	1	0	0	1	1	1	1	1	2	1	0	1	1	0	27		
Do	2	2	1	2	0	1	1	0	2	2	1	1	0	1	2	2	2	1	1	1	1	1	1	2	2	1	2	2	0	1	1	1	39		
Me	2	2	1	2	1	1	1	0	2	2	2	1	0	1	1	1	1	1	1	0	0	2	1	1	1	1	1	1	1	2	1	1	35		
Si	1	1	1	1	0	1	0	0	1	1	1	1	0	0	1	1	0	0	0	0	0	0	1	0	0	1	1	0	1	1	0	16			
Es	2	2	1	1	0	1	1	0	1	1	1	1	0	1	1	1	1	1	1	0	0	0	1	1	1	1	1	0	1	1	1	1	26		
Lo	2	2	2	2	2	2	2	1	2	2	2	2	0	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	1	2	2	2	55		
RS	2	2	2	2	1	1	1	1	2	2	2	2	0	1	2	2	2	1	1	0	1	1	1	1	1	1	2	2	1	1	1	1	45		
Ag	2	2	2	1	1	1	1	0	2	2	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	2	0	1	1	1	32		
Wn	2	2	2	1	1	0	0	0	1	2	1	1	0	1	1	1	1	1	0	0	0	0	1	1	0	2	1	0	0	1	0	1	24		
Wi	2	2	2	2	1	1	1	1	2	2	2	2	1	1	1	2	2	1	1	0	0	1	2	1	1	1	2	2	1	2	1	1	43		
Ab	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	2	1	1	1	1	1	34		
Ni	1	1	1	1	0	0	0	0	1	1	1	1	0	1	1	1	1	1	0	0	0	0	1	1	0	1	1	0	1	0	0	0	18		
Ma	2	2	2	2	1	1	0	0	2	2	1	2	0	1	1	1	1	1	1	0	0	1	2	1	1	2	2	0	1	1	1	1	35		
Sw	2	2	2	1	0	1	0	0	2	2	1	1	0	1	1	1	1	1	1	0	0	0	1	1	1	1	2	1	0	1	1	1	28		
Na	2	2	1	1	0	1	1	0	2	1	1	1	0	1	1	1	1	1	1	0	0	0	1	1	1	2	1	0	1	1	1	1	28		
CF	2	2	2	1	0	1	1	1	2	2	1	1	0	1	1	1	1	1	1	0	0	1	2	1	1	2	1	0	1	1	1	1	33		
Ch	1	1	1	1	0	0	0	0	1	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10		
Fu	1	1	1	1	0	0	0	0	1	1	1	1	0	1	1	1	1	1	0	0	0	0	1	1	1	2	1	0	0	1	1	1	21		
SM	1	1	1	1	0	0	0	0	1	1	1	1	0	0	1	1	1	1	0	0	0	0	1	1	0	1	1	0	0	1	1	1	18		
Eb	2	2	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	0	0	0	2	1	1	2	2	1	1	1	1	1	36		
TL	2	2	1	1	1	1	0	0	2	2	1	1	0	1	1	1	1	1	1	0	0	1	2	1	1	2	2	1	1	1	1	1	33		
SF	-	2	1	1	-	-	-	0	2	2	1	1	0	1	1	1	1	1	1	0	0	0	0	1	1	0	1	1	0	-	1	0	21		
Tu	1	1	1	1	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	0	0	0	0	1	1	0	1	1	0	0	1	1	19		
Ks	2	2	2	1	1	1	0	0	2	2	1	1	0	1	1	1	1	1	1	0	0	0	2	1	1	2	1	1	1	1	2	1	32		
SJ	1	1	1	1	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	13		
Te	2	2	2	2	2	1	1	0	2	2	2	2	1	2	2	2	2	2	2	1	1	0	2	2	2	2	2	2	1	0	1	2	49		
He	2	2	2	1	1	1	0	0	2	2	1	1	0	1	1	1	1	1	1	0	0	0	2	1	1	2	1	1	1	1	1	1	31		
Ka	2	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	0	0	0	1	1	1	1	2	1	1	1	1	1	28		
Ta	2	2	1	1	1	0	0	0	1	1	0	1	0	1	0	1	1	1	0	0	0	0	1	1	1	2	1	0	0	1	0	0	21		
Ho	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	3		
Al	2	1	1	1	0	1	1	0	2	2	1	1	0	1	1	0	1	1	0	0	0	0	0	1	0	1	2	1	1	1	1	1	26		
Hu	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6		
Va	1	1	1	1	0	0	0	0	1	1	1	0	0	0	1	1	1	1	0	0	0	0	1	0	0	1	1	0	0	1	0	0	15		
EL	2	1	1	1	0	0	0	0	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	1	1	0	1	1	0	1	1	1	20		
Ap	1	1	0	0	0	0	0	0	0	1	0	0	0	0	-	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
Pi	2	2	1	1	0	0	0	0	2	1	0	1	0	1	1	0	1	1	0	0	0	0	1	1	1	2	2	0	0	0	1	1	22		
Tn	2	2	1	1	0	0	0	0	2	2	1	1	0	0	1	1	1	1	0	0	0	0	1	1	1	2	1	1	1	1	1	1	26		
Hr	2	2	1	1	0	0	0	0	1	1	1	1	0	0	1	1	1	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	17		
Wa	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	11		
To	2	2	1	1	1	1	1	1	-	1	1	1	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0	1	1	0	25		
Am	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
Σ	72	71	53	49	20	29	21	86	26	44	54	3	63	54	14	14	84	40	20	11	5	13	53	38	30	65	52	13	30	37	28	1143			

Selected Days: Five quiet 8, 13, 20, 21, 22

Five disturbed 1, 2, 9, 10, 26

Ten quiet 5, 7, 8, 13, 19, 20, 21, 22, 28, 31

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

June

	D a y																														Sum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Tr	2	2	2	2	1	2	2	2	2	1	2	2	1	1	2	2	2	2	2	1	1	1	1	1	2	1	1	2	1	1	47
Co	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	2	2	0	1	1	0	1	1	1	1	1	1	1	29
So	1	2	2	1	1	1	1	2	1	1	1	1	1	1	2	2	1	2	2	1	1	1	1	0	2	1	1	1	1	1	38
Le	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	2	2	1	0	1	0	0	0	2	1	1	1	1	1	28
Do	1	1	1	0	1	1	1	1	1	1	1	0	1	1	2	1	1	2	1	1	1	1	1	0	2	1	1	1	1	1	30
Me	1	2	1	1	1	2	1	1	1	0	1	1	1	1	1	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	35
Si	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	8
Es	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	2	2	1	0	1	1	0	0	1	1	1	1	1	1	28
Lo	2	2	2	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2	1	2	1	2	2	1	2	52
RS	2	2	2	1	2	1	2	2	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	2	1	2	1	1	1	44
Ag	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	32
Wn	1	1	0	0	0	1	0	1	1	0	1	1	1	2	1	1	1	2	1	0	0	0	0	0	2	0	1	1	1	1	22
Wi	2	1	2	1	1	2	1	2	2	1	1	1	1	2	2	1	2	2	2	1	1	1	1	1	2	1	2	1	1	1	42
Ab	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	32
Ni	1	1	0	0	0	1	0	1	1	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	1	0	0	0	1	1	16
Ma	2	1	2	1	1	2	1	2	2	1	2	1	1	2	2	1	2	2	2	1	1	0	0	0	2	1	2	1	1	1	40
Sw	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	2	2	2	1	1	0	0	0	2	1	1	1	1	1	31
Na	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1	1	0	0	0	1	1	1	1	1	1	29
CF	1	1	0	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	1	0	1	1	0	1	2	1	1	1	1	1	31
Ch	1	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	8
Fu	1	1	0	0	0	1	0	1	0	0	0	0	0	0	1	1	1	2	1	0	0	0	0	0	2	0	0	0	1	0	14
SM	1	1	0	0	0	1	1	1	0	0	0	1	1	1	0	1	1	0	1	2	0	1	0	0	0	1	1	1	0	1	19
Eb	1	1	2	1	1	2	1	1	1	1	1	1	1	2	1	1	2	2	2	1	-	-	1	1	-	-	1	-	1	1	31
TL	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	2	2	2	1	1	0	0	0	2	1	1	1	1	1	33
SF	-	1	1	0	1	1	0	1	0	0	1	0	0	1	1	1	1	2	1	0	0	0	0	0	2	1	0	1	1	1	18
Tu	1	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	1	1	1	0	0	0	14
Ks	2	1	2	1	1	2	1	1	1	1	1	0	0	2	1	1	2	1	1	1	0	0	0	0	2	1	1	1	1	1	30
SJ	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	0	0	0	1	0	0	1	0	0	11
Te	2	2	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	1	1	0	0	2	2	2	2	2	1	47
He	1	1	2	1	1	1	1	1	0	1	1	-	-	2	1	1	2	2	1	1	1	0	0	0	1	1	1	1	1	1	28
Ka	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	30
Ta	1	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1	1	0	1	0	1	0	1	1	1	1	1	1	23
Ho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	4
Al	1	1	0	0	1	1	1	1	0	1	1	1	2	2	2	1	2	2	1	0	1	0	0	0	2	1	1	1	1	1	29
Hu	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	5
Va	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	5
El	1	1	0	0	0	1	0	1	0	0	0	0	0	1	-	0	2	1	1	0	0	0	0	0	1	0	1	1	0	0	12
Ap	0	1	0	0	0	0	0	-	0	0	0	0	0	-	-	-	1	1	-	0	0	0	0	0	0	0	0	0	0	0	3
Pi	1	1	1	0	0	1	0	1	0	0	0	0	1	2	1	0	2	2	2	0	0	0	0	0	1	0	1	0	0	0	17
Tn	1	1	1	1	1	1	1	1	0	0	1	1	1	2	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Hr	1	1	1	0	0	1	0	1	0	0	0	0	1	1	1	0	1	2	1	0	0	0	0	0	1	0	0	0	1	0	14
Wa	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	1	0	0	1	0	0	9
To	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	0	1	1	1	1	1	1	26
Am	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
Σ	44	46	36	26	26	50	28	43	30	22	33	30	31	56	47	36	61	69	56	19	25	15	13	11	58	28	35	34	30	27	1063

Selected Days: Five quiet 10, 20, 22, 23, 24

Five Disturbed 6, 17, 18, 19, 25

Ten quiet 4, 5, 10, 20, 21, 22, 23, 24, 29, 30

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

July

Day																																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Sum			
Tr	2	2	2	2	2	2	2	2	2	1	-	1	2	1	2	2	2	2	2	2	1	2	2	1	2	2	2	2	2	2	2	55			
Co	1	2	1	1	1	1	0	0	0	0	1	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	25			
So	2	2	2	2	1	1	1	2	1	0	1	1	1	0	2	1	1	2	1	1	0	2	2	0	2	2	2	2	2	1	2	42			
Le	2	2	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	2	28			
Do	2	2	1	1	1	0	1	1	1	1	0	0	0	0	2	2	1	1	1	1	1	0	1	1	0	1	1	1	1	1	2	29			
Me	1	2	2	1	1	1	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	2	1	1	2	1	2	2	1	2	35			
Si	1	2	1	1	0	0	0	0	1	0	1	0	0	0	0	1	1	1	0	1	1	1	0	1	1	0	1	1	1	0	2	21			
Es	2	2	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	2	31			
Lo	2	2	2	2	2	2	1	2	2	1	1	1	1	2	2	2	2	2	2	2	1	2	2	0	2	2	2	2	2	1	2	53			
RS	2	2	2	2	1	2	1	1	2	1	1	1	1	1	2	2	2	2	2	1	1	2	2	1	2	2	2	2	1	2	2	49			
Ag	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	34			
Wn	1	2	1	1	0	1	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	1	1	1	0	1	1	19			
Wi	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	2	2	1	1	2	2	2	1	1	2	45			
Ab	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	32			
Ni	1	1	1	1	0	1	0	0	1	0	1	0	0	0	0	1	1	1	1	0	1	0	1	1	0	1	1	1	0	1	1	20			
Ma	2	2	2	1	1	1	1	-	1	0	1	0	1	0	2	2	2	2	1	1	0	2	2	0	1	0	1	2	1	1	2	35			
Sw	2	2	2	1	1	1	1	0	1	1	0	0	0	0	1	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	29			
Na	1	2	1	1	1	1	1	1	1	0	1	1	0	0	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	26			
CF	1	2	2	1	1	1	1	1	1	1	1	1	1	0	0	1	2	2	2	1	1	0	2	1	0	1	2	1	2	1	2	36			
Ch	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	1	1	1	0	0	12			
Fu	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	2	1	1	0	1	1	16			
SM	1	2	2	0	0	1	0	0	1	1	0	0	0	0	0	1	1	1	2	1	1	0	1	1	0	1	1	2	1	1	1	25			
EB	2	2	2	1	-	1	1	-	-	1	1	0	1	1	2	1	2	1	1	1	1	2	2	0	1	2	2	2	1	1	2	37			
TL	2	2	1	1	1	1	1	1	1	1	1	1	1	0	1	1	2	1	1	1	0	2	2	0	1	2	2	2	1	1	2	37			
SF	1	2	1	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0	0	1	1	1	1	1	1	18			
Tu	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	0	0	1	1	1	1	1	15			
Ks	2	1	2	1	1	1	0	0	1	1	0	0	0	0	2	2	2	2	1	0	0	1	1	0	0	1	1	2	2	1	2	31			
SJ	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	0	1	1	1	0	1	16			
Te	2	2	2	2	2	2	2	2	2	1	0	1	1	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	53			
He	2	2	1	1	1	1	0	0	1	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	1	2	2	1	1	1	2	25			
Ka	1	2	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	30			
Ta	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	1	1	1	0	0	2	16			
Ho	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	1	8			
Al	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	1	1	0	1	1	1	1	1	2	21			
Hu	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	6			
Va	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3			
EL	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	1	1	1	0	0	1	14		
Ap	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4			
Pi	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	1	1	0	1	0	2	15			
Tn	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Hr	1	2	1	1	0	0	0	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	0	1	1	1	0	1	1	17			
Wa	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	1	1	0	1	10			
To	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24			
Am	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	6				
Σ	527	55	14	3	25	29	20	20	34	18	16	13	14	84	24	64	64	47	28	26	14	52	46	12	37	54	46	57	32	36	64	1103			

Selected Days: Five quiet 10, 12, 13, 14, 24

Five disturbed 2, 3, 26, 28, 31

Ten quiet 7, 8, 10, 11, 12, 13, 14, 20, 21, 24

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

August

D a y																																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Sum		
Tr	2	2	1	2	2	2	1	1	1	1	2	2	2	1	2	1	1	0	1	2	2	2	2	2	2	2	2	2	2	1	2	50		
Co	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	29		
So	2	2	1	2	1	1	1	0	1	0	2	2	2	1	2	1	2	0	1	2	2	2	2	2	2	2	2	2	1	1	2	46		
Le	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	2	1	1	1	1	1	1	1	1	0	1	29		
Do	2	2	0	1	1	1	1	0	1	1	2	1	2	1	1	1	1	0	1	2	2	2	1	2	2	2	2	1	1	1	1	39		
Me	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	2	1	1	2	2	2	1	2	1	2	2	1	1	1	1	38		
Si	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	1	2	2	1	1	0	1	1	1	1	0	0	13		
Es	1	1	1	1	1	1	1	0	1	1	1	1	2	1	1	1	1	0	1	1	2	1	1	1	1	1	1	1	1	0	1	30		
Lo	2	2	1	2	2	2	2	0	1	1	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2	1	2	54		
Rs	2	2	1	2	2	1	1	1	1	1	2	2	1	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2	1	2	51		
Ag	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1	2	38		
Wn	2	1	0	1	1	0	0	0	1	0	1	1	2	0	1	1	1	0	0	2	2	1	1	1	2	1	2	1	1	0	1	28		
Wi	2	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	2	47		
Ab	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	32		
Ni	1	1	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	23	
Ma	2	1	0	1	1	0	0	0	1	0	1	2	1	1	2	1	1	0	0	2	2	1	2	1	2	1	2	1	1	0	1	31		
Sw	2	1	1	1	1	1	1	0	1	1	1	1	2	1	1	1	1	0	0	2	2	2	1	1	2	1	2	1	1	0	1	34		
Na	2	1	0	1	1	0	1	0	1	1	1	1	2	1	1	1	1	0	1	1	2	1	1	1	1	1	1	1	1	1	1	30		
CF	2	1	1	1	1	1	1	0	1	1	1	1	2	1	2	1	1	0	1	2	2	1	1	1	2	2	2	1	1	1	1	37		
Ch	1	1	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	0	1	2	2	1	1	1	2	2	2	1	1	1	1	15		
Fu	2	1	0	0	0	0	0	0	0	0	1	2	0	1	1	1	0	0	1	1	1	0	1	1	1	1	1	0	1	0	0	24		
SM	2	1	0	1	1	1	1	0	1	0	0	1	1	0	1	2	1	0	0	1	2	1	1	1	1	2	2	1	1	1	1	29		
Eb	2	2	1	1	1	1	1	1	1	1	1	2	1	2	2	2	1	0	1	2	2	2	2	2	2	2	2	1	1	1	1	42		
Tl	2	2	0	1	1	1	1	0	1	1	1	1	2	1	2	2	2	0	1	2	2	2	2	2	2	2	2	1	1	1	1	41		
SF	2	1	0	1	1	0	0	-	-	0	1	1	1	0	1	1	1	0	0	2	2	-	-	1	2	2	2	1	1	1	1	24		
Tu	1	1	0	0	1	0	0	0	0	0	1	1	1	0	1	-	-	0	0	1	1	1	1	1	1	1	1	1	0	0	1	17		
Ks	2	2	0	1	0	1	0	0	1	1	1	2	1	2	2	2	0	1	1	2	2	2	1	2	2	2	2	1	1	1	1	38		
SJ	1	1	0	1	0	0	0	0	0	0	1	1	1	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	17		
Te	2	2	2	2	2	1	1	1	1	1	1	2	2	1	2	2	2	1	1	2	2	2	2	2	2	2	2	2	1	1	1	50		
He	2	2	1	1	1	1	1	0	1	1	1	1	2	0	2	2	1	0	0	1	2	2	2	2	1	1	2	1	1	1	1	36		
Ka	1	1	1	1	1	0	1	0	0	0	1	1	1	1	1	2	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	26	
Ta	1	1	0	1	1	1	0	0	1	0	1	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	29	
Ho	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	1	0	0	1	1	0	0	0	0	0	8		
Al	2	1	0	0	0	0	0	0	1	1	1	2	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27		
Hu	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	1	0	0	1	1	1	1	1	1	1	11		
Va	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	0	0	0	0	7		
El	2	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2	1	0	0	1	1	1	0	1	1	1	1	0	0	0	0	16		
Ap	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	5		
Pi	2	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	2	1	1	0	1	0	0	0	0	1	0	16		
Tn	1	1	1	1	0	0	0	0	1	2	1	1	2	1	1	2	1	0	1	2	2	1	2	1	2	2	1	1	1	1	1	34		
Hr	1	1	0	1	0	0	1	0	0	0	0	1	1	0	0	1	1	0	0	1	2	1	1	1	1	1	1	1	0	0	1	19		
Wa	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	0	0	10		
To	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	27		
Am	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	4		
Σ	66	50	20	35	31	24	23	8	27	23	39	41	67	26	47	56	43	8	26	59	71	58	48	45	56	53	42	35	25	38	1251			

Selected Days: Five quiet 3, 8, 10, 18, 30

Five disturbed 1, 13, 20, 21, 25

Ten quiet 3, 6, 7, 8, 9, 10, 14, 18, 19, 30

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

September

D a y																																Sum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Tr	1	1	1	1	1	1	2	1	2	2	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	49	
Co	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	30	
So	1	0	1	0	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	51	
Le	0	0	0	0	1	1	0	0	1	1	1	1	2	1	1	2	1	1	2	2	2	2	2	2	1	2	2	1	1	1	32	
Do	0	0	1	1	1	1	1	1	1	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	46	
Me	0	0	1	0	1	1	0	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	42	
Si	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	0	1	0	23	
Es	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	2	1	1	1	2	2	1	1	1	0	31	
Lo	1	0	1	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	53	
RS	1	0	1	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	53	
Ag	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	1	1	1	46	
Wn	0	0	0	0	1	1	1	0	1	1	2	2	2	1	1	2	2	1	2	2	2	2	2	2	1	2	2	2	0	1	0	36
Wi	1	1	1	1	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	52	
Ab	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	2	2	2	1	1	2	2	1	1	1	37	
Ni	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	0	26	
Ma	0	0	0	0	1	1	1	1	1	1	1	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	1	2	0	41	
Sw	0	0	1	1	1	1	1	1	1	1	2	2	2	1	1	2	2	1	2	2	2	2	2	2	2	2	2	0	1	1	41	
Na	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	2	2	2	2	2	2	1	1	1	1	36	
CF	0	0	0	1	1	1	1	1	1	1	2	2	2	1	1	2	2	1	2	2	2	2	2	2	1	2	1	2	0	1	0	37
Ch	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	19	
Fu	0	0	0	0	1	1	1	0	1	1	1	2	1	1	1	2	2	1	2	2	2	2	2	2	2	1	2	0	1	0	34	
SM	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	2	2	1	2	2	2	2	2	2	2	2	2	0	1	0	34	
Eb	1	0	1	1	1	1	1	1	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	45	
TL	0	0	1	0	1	1	1	1	1	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	0	43	
SF	1	1	0	1	1	1	1	-	1	1	-	2	1	1	2	1	1	-	-	2	2	1	1	2	1	2	0	1	-	29		
Tu	0	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0	24	
Ks	0	0	-	0	1	1	1	0	0	1	2	1	1	0	1	2	2	2	2	2	2	2	2	2	2	2	2	0	2	0	35	
SJ	0	0	0	0	0	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	0	1	0	23	
Te	1	0	0	0	1	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	47	
He	0	0	0	0	2	1	1	1	0	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	0	40	
Ka	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	0	1	1	25	
Ta	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	2	1	1	1	1	2	2	1	0	1	30	
Ho	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	2	1	1	1	1	1	0	0	0	18	
Al	0	0	0	0	1	2	1	1	1	2	2	1	2	1	2	2	2	1	2	2	2	2	1	2	2	2	2	0	2	0	40	
Hu	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	0	1	1	0	0	0	15	
Va	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	0	1	1	0	0	0	10	
El	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	2	1	2	1	1	0	28	
Ap	0	0	0	0	0	-	-	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	2	1	2	0	0	19	
Pi	0	0	0	0	0	0	0	1	0	1	2	1	1	1	1	2	1	0	2	1	1	1	1	1	1	2	2	1	1	0	25	
Tn	0	0	0	0	1	1	1	1	2	2	1	2	1	2	2	2	1	2	2	2	2	2	2	2	1	2	2	0	2	0	39	
Hr	0	0	0	0	1	1	1	0	1	1	2	1	2	1	1	2	1	1	2	2	2	2	2	1	1	2	2	2	1	1	0	34
Wa	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0	1	1	0	1	2	1	1	1	1	1	2	1	1	0	1	0	19
To	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	2	2	2	1	2	1	2	1	1	35	
Am	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	0	13	
Σ	11	5	13	12	35	44	33	26	39	54	59	58	62	47	57	77	66	50	73	74	75	73	67	59	81	71	69	28	51	16	1485	

Selected Days: Five quiet 1, 2, 3, 4, 30

Five disturbed 16, 20, 21, 22, 25

Ten quiet 1, 2, 3, 4, 5, 7, 8, 9, 28, 30

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

October

D a y																																		Sum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Tr	0	1	0	0	1	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	0	0	1	1	2	0	0	0	40		
Co	0	1	0	0	0	0	1	2	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	0	0	1	1	2	0	0	0	26		
So	0	1	1	1	0	0	2	2	2	2	1	2	2	1	2	2	2	2	2	2	1	2	1	0	0	2	1	2	1	1	0	40		
Le	0	1	0	0	0	0	2	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	0	0	1	1	2	1	1	0	27		
Do	0	1	0	0	0	0	2	2	2	2	1	1	2	2	1	2	2	2	2	1	1	1	1	0	0	2	0	2	2	0	0	34		
Me	0	1	1	0	0	0	1	2	2	1	1	1	1	1	1	1	2	2	2	1	1	1	1	0	0	1	1	2	0	1	0	29		
Si	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	1	0	0	0	10		
Es	1	1	0	0	0	0	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0	0	1	1	2	1	1	0	27		
Lo	1	2	1	1	1	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	0	2	1	2	2	1	49		
RS	1	2	1	1	1	0	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	1	2	2	0	2	1	2	1	1	0	45		
Ag	0	1	1	0	0	0	1	2	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	0	0	1	1	2	1	1	0	29		
Wn	0	0	0	0	0	0	2	2	1	2	1	1	1	1	1	1	2	2	2	1	1	1	1	0	0	1	0	2	0	0	0	26		
Wi	1	2	1	1	1	0	2	2	2	2	2	1	2	2	2	2	2	2	2	2	1	2	1	0	0	2	1	2	1	1	0	44		
Ab	1	1	1	1	1	0	2	2	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	2	1	1	0	35		
Ni	0	0	0	0	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	1	0	0	1	0	2	0	0	0	17		
Ma	0	1	1	0	0	0	2	2	2	2	1	1	2	2	1	2	2	2	2	2	1	2	1	0	0	2	1	2	0	0	0	36		
Sw	1	1	1	0	0	0	2	2	2	2	1	1	1	1	1	1	2	2	2	1	1	1	1	0	0	1	1	2	1	1	0	33		
Na	0	1	1	1	0	0	2	2	2	2	1	1	1	1	1	1	2	2	2	1	1	1	1	0	0	1	1	2	1	1	0	33		
CF	0	1	1	0	0	0	2	2	1	2	1	1	1	1	1	1	2	2	2	1	1	1	1	0	0	1	0	2	1	1	0	30		
Ch	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	12		
Fu	0	0	0	0	0	0	2	2	1	2	1	1	1	1	0	1	2	1	1	1	0	1	0	0	0	0	0	2	0	0	0	20		
SM	0	1	1	0	0	0	1	2	1	1	1	0	1	1	1	1	2	2	1	1	1	1	0	0	0	1	1	2	0	1	0	25		
Eb	0	1	1	0	1	0	2	2	2	2	1	1	2	1	1	1	2	2	2	2	1	2	1	2	1	0	2	1	2	2	1	38		
TL	0	1	0	0	0	0	2	2	2	2	1	1	2	1	1	2	2	2	2	2	1	1	1	0	0	2	1	2	0	1	0	34		
SF	-	1	0	-	0	0	1	2	1	1	1	0	1	1	0	1	2	1	1	0	1	1	0	0	0	1	0	2	0	0	0	19		
Tu	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	0	1	0	0	17		
Ks	0	1	1	0	0	0	-	2	2	2	2	1	2	1	1	2	2	2	2	1	1	2	1	0	0	1	0	2	0	1	0	32		
SJ	0	0	0	0	0	0	1	1	1	1	0	1	1	1	0	1	2	1	1	1	1	1	0	0	0	0	1	0	2	0	0	18		
Te	1	1	0	0	0	0	2	2	2	2	1	1	2	2	1	2	2	2	2	2	2	2	1	1	0	0	1	1	2	2	0	39		
He	1	1	1	0	0	0	2	2	2	2	1	1	2	1	1	1	2	2	2	2	1	1	1	1	0	0	1	1	2	1	0	33		
Ka	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	2	1	1	26		
Ta	1	1	0	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	0	0	1	0	2	2	1	30		
Ho	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	8		
Al	1	1	0	0	0	0	2	2	1	1	1	1	2	1	1	1	2	2	1	1	1	2	1	0	0	1	0	2	0	0	0	28		
Hu	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0	1	0	1	0	0	13		
Va	0	0	0	-	0	0	1	1	0	1	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	2	1	0	0	12		
EL	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	0	0	8		
Ap	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	6		
Pi	0	0	0	0	0	0	2	2	0	1	0	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	1	0	2	1	1	17		
Tn	1	1	0	0	0	0	2	2	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0	0	1	0	2	1	0	0	27		
Hr	0	0	0	0	0	0	1	2	1	1	1	1	1	1	0	1	2	1	1	1	1	1	1	0	0	0	1	0	2	0	0	20		
Wa	0	0	0	0	0	0	1	1	1	1	1	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	2	0	0	11		
To	0	1	0	0	0	0	1	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	0	1	1	2	1	1	0	27		
Am	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	2	0	0	0	8		
Σ	12	31	15	7	7	26	57	25	56	40	33	53	46	33	47	56	56	44	35	44	31	3	144	218	226	22	2	1138						

Selected Days: Five quiet 4, 6, 24, 25, 31

Five disturbed 8, 17, 18, 19, 28

Ten quiet 1, 3, 4, 5, 6, 24, 25, 27, 30, 31

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

November

Day																																Sum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		Sum	
Tr	1	2	2	2	2	2	2	1	2	0	1	2	2	2	2	1	2	0	1	2	1	1	1	2	2	1	1	2	2	2		46	
Co	0	1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	0	0	1	2	1	1	1	1	1	1	0	1	1		22	
So	0	2	2	2	1	2	2	1	1	0	1	2	2	2	2	1	2	1	1	2	1	1	2	1	1	1	1	0	2	2		41	
Le	0	1	1	1	1	1	1	0	1	0	0	1	2	2	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1		26	
Do	1	2	2	2	1	2	2	1	2	0	1	1	2	2	2	1	2	1	0	2	1	1	1	0	2	1	1	0	2	2		40	
Me	0	1	2	2	1	1	1	0	1	0	0	1	2	2	2	1	1	0	1	0	1	1	1	1	1	1	1	0	1	2		29	
Si	0	0	1	1	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		7	
Es	0	1	1	1	1	1	1	0	1	0	1	1	2	2	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1		27	
Lo	1	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2		54	
RS	1	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	1	2	1	2	1	2	2	2	2	2	2	1	2	2		50	
Ag	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	1	1		25	
Wn	0	1	1	1	1	1	1	0	1	0	0	1	2	2	1	1	1	0	0	1	0	1	1	1	1	1	1	0	0	1		23	
Wi	1	1	2	2	2	2	2	1	1	0	1	2	2	2	2	1	2	1	1	2	1	2	2	2	2	2	2	1	2	2		47	
Ab	1	1	1	1	1	1	1	1	1	0	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		31	
Nl	0	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	0	1	1		20	
Ma	0	1	2	1	1	2	2	1	1	0	0	1	2	2	2	0	2	0	1	2	1	1	1	1	2	2	1	0	2	2		36	
Sv																																	
Na	1	1	1	1	1	2	1	1	1	0	1	1	2	2	1	1	2	0	1	1	1	1	1	1	1	1	1	0	1	1		31	
CF	0	1	2	2	1	1	1	0	1	0	0	1	2	2	1	1	1	0	0	1	1	1	1	1	1	1	1	0	1	2		28	
Ch	0	0	1	1	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		7	
Fu	0	1	1	1	0	1	1	0	0	0	0	1	2	2	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0		14	
SM	0	1	1	2	1	1	1	0	1	0	0	1	2	2	1	0	1	0	0	1	0	1	1	1	1	1	0	0	1	1		22	
Eb	1	1	2	1	1	2	1	1	1	0	1	2	2	2	1	1	2	1	1	1	1	1	2	1	2	2	1	1	1	1		38	
TL	1	1	2	1	1	2	1	1	1	0	1	2	2	2	1	1	2	1	1	1	1	1	1	1	1	2	1	0	2	2		37	
SF	0	1	1	1	1	-	1	0	1	0	-	-	2	1	0	1	0	0	1	0	1	1	1	1	1	1	0	0	1	1		17	
Tu	0	0	1	1	1	1	1	0	1	0	0	1	1	1	1	0	1	0	0	0	0	0	1	1	0	1	0	0	1	1		17	
Ks	1	1	2	1	1	2	1	1	1	0	0	1	2	2	1	1	2	0	0	2	1	2	2	2	2	2	1	0	1	2		36	
SJ	0	0	0	1	1	1	1	0	1	0	0	1	1	1	1	0	1	0	0	0	0	1	1	0	1	0	0	1	1	0		16	
Te	0	1	1	1	1	1	1	0	1	0	0	1	2	2	2	1	1	0	0	1	1	2	2	1	1	0	0	2	2	1		29	
He	1	1	2	1	1	2	1	1	1	0	0	1	2	2	1	0	2	0	1	2	0	1	1	2	2	1	0	1	1	1		32	
Ka	0	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1		25	
Ta	0	1	1	1	1	1	1	1	1	0	0	1	2	1	1	1	1	0	0	1	0	1	0	1	0	1	1	0	1	1		23	
Ho	0	0	1	0	0	0	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		6	
Al	0	1	1	1	1	1	1	0	1	0	0	1	2	2	2	1	1	0	0	1	0	1	0	1	1	1	1	0	1	1		25	
Hu	0	0	1	-	0	0	1	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		6	
Va	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0		3	
El	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0		10	
Ap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1	
Pi	0	1	1	1	0	1	2	0	1	0	0	1	2	2	1	0	2	1	1	1	1	-	-	-	-	-	-	-	-	-		19	
Tn	1	1	1	1	1	2	1	0	1	0	1	1	2	2	1	0	1	0	1	1	1	1	1	1	1	1	1	0	1	1		28	
Hr	0	0	1	1	1	1	1	0	1	0	0	1	2	1	1	0	1	0	0	1	0	1	1	1	1	1	0	0	1	1		19	
Wa	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1		7	
To	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1		26	
Am	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		4	
Σ	12	36	51	45	53	64	64	51	73	7	11	74	56	66	85	0	26	48	16	14	40	23	38	38	38	43	29	54	24	9	29		1050

Selected Days: Five quiet 1, 10, 18, 19, 27

Five disturbed 3, 13, 14, 15, 29

Ten quiet 1, 8, 10, 11, 16, 18, 19, 21, 26, 27

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1951

December

	D a y																															Sum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Sum		
Tr	2	2	2	2	1	0	2	2	2	2	2	1	0	2	2	1	2	1	2	2	1	2	1	0	0	0	1	2	1	0	2	42		
Co	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	0	1	1	0	0	0	1	1	1	1	22		
So	1	2	2	2	1	0	1	2	2	2	2	1	0	2	2	1	2	2	1	1	1	2	1	0	0	0	0	1	2	1	1	2	40	
Le	1	1	1	1	1	0	1	2	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	2	1	0	1	27	
Do	1	2	2	2	1	0	1	2	2	2	2	1	0	1	2	0	2	2	1	1	0	2	1	0	0	0	0	2	0	0	2	34		
Me	1	1	1	1	1	0	1	2	2	2	1	1	0	1	0	1	1	1	1	1	0	1	1	0	0	0	0	1	2	1	1	2	29	
Si	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	1	8		
Es	1	1	1	1	1	0	1	2	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	2	1	1	1	28	
Lo	2	2	2	2	2	1	2	2	2	2	2	2	1	1	2	2	1	2	2	2	2	2	2	2	2	1	1	0	2	2	2	2	54	
RS	1	2	2	2	1	1	2	2	2	2	2	1	1	2	2	1	2	2	2	1	1	2	2	1	1	1	0	2	2	1	1	2	48	
Ag	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	0	0	0	1	2	1	1	1	26	
Wn	1	1	0	1	1	0	0	2	2	1	1	1	0	0	2	0	1	1	1	1	0	2	1	0	0	0	0	1	2	0	0	2	25	
Wi	1	1	1	2	1	0	1	2	2	2	2	1	0	1	2	1	2	2	2	1	2	2	1	0	0	0	0	2	2	1	1	2	40	
Ab	1	1	1	1	1	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1	1	1	32	
Ni	1	1	1	1	1	0	1	1	1	1	1	0	0	1	1	0	1	1	1	1	0	0	1	0	0	0	0	1	1	0	0	1	19	
Ma	1	1	1	2	1	0	1	2	2	2	1	1	0	2	2	1	2	2	2	1	1	2	1	0	0	0	1	2	0	1	2	37		
Sw																																		
Na	1	1	1	1	1	0	1	2	2	1	1	1	0	0	1	1	1	1	1	1	1	1	2	1	0	0	0	1	2	1	1	2	31	
CF	1	1	1	2	1	0	1	2	2	2	1	0	0	0	2	0	1	2	2	1	1	2	1	0	0	0	0	1	2	0	0	2	31	
Ch	0	0	0	1	0	0	0	1	1	1	1	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	1	11	
Fu	0	0	0	1	0	0	1	2	2	1	1	0	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	1	2	0	0	2	19	
SM	1	1	1	1	1	0	1	2	2	1	1	1	1	1	1	1	1	1	2	1	0	2	1	0	0	0	0	1	2	0	0	2	30	
Eb	1	1	1	2	1	1	1	2	2	2	2	0	0	1	2	1	1	2	1	1	1	2	1	0	0	0	0	1	2	1	1	2	36	
TL	1	1	1	2	1	1	1	2	2	1	2	1	0	1	2	1	2	2	1	1	1	2	1	0	0	0	0	1	2	1	1	2	37	
SF	1	0	1	1	1	0	1	2	-	1	1	0	1	1	1	0	1	1	1	0	0	1	-	0	0	0	0	1	2	0	1	2	22	
Tu	0	1	0	1	1	0	0	1	1	1	1	0	0	0	1	0	1	1	1	1	1	0	1	1	0	0	0	1	1	0	0	1	17	
Ks	1	0	0	2	1	0	2	2	2	2	2	0	0	0	1	1	1	1	2	1	0	2	1	0	0	0	0	0	1	1	1	2	30	
SJ	0	0	0	1	0	0	1	1	1	1	1	0	0	0	1	0	1	1	1	1	1	0	1	1	0	0	0	1	2	0	1	1	18	
Te	1	0	1	2	1	1	1	2	2	2	2	1	0	1	2	1	2	2	2	0	1	2	2	0	0	0	0	2	2	1	2	2	40	
He	0	1	1	2	1	0	1	2	2	1	1	0	0	2	1	1	1	1	2	1	0	2	1	0	0	0	0	2	2	1	1	2	32	
Ka	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	0	1	1	1	0	0	1	1	0	0	0	0	1	2	1	1	1	23	
Ta	1	1	1	1	0	0	1	2	1	1	1	1	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	1	2	1	0	1	19
Ho	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0	0	1	9	
Al	1	0	1	2	1	0	1	2	2	1	1	1	0	1	1	1	1	1	1	1	0	0	2	1	0	0	0	1	2	0	1	2	28	
Hu	0	0	0	1	0	0	0	1	1	1	1	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	0	0	2	0	0	1	12	
Va	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	9	
EL	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	2	0	0	2	11	
Ap	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	5		
Pi																																		
Tn	1	0	1	2	1	0	1	2	2	1	1	0	0	1	1	1	1	1	1	1	0	0	2	1	0	0	0	2	2	0	1	2	28	
Hr	1	0	0	1	0	0	1	2	2	1	1	0	0	1	1	0	1	1	1	1	0	0	1	0	0	0	0	1	2	0	0	1	19	
Wa																																		
To	1	1	0	1	1	0	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	2	1	1	1	29	
Am	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	1	8	
Σ	31	30	31	54	30	6	35	68	61	52	47	21	8	30	48	19	44	48	26	17	59	31	3	3	0	38	75	21	24	63	1065			

Selected Days: Five quiet 6, 13, 24, 25, 26

Five disturbed 8, 9, 22, 28, 31

Ten quiet 6, 12, 13, 16, 21, 24, 25, 26, 29, 30

TABLE 4. INTERNATIONAL MAGNETIC CHARACTER-FIGURES, C, 1951
(Based on data of Table 3)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.6	1.2	0.8	0.4	1.7	1.0	1.2	1.5	0.3	0.3	0.3	0.8
2	1.0	0.1	0.4	1.3	1.6	1.0	1.7	1.1	0.1	0.7	0.8	0.7
3	0.7	0.0	0.4	1.5	1.2	0.8	1.2	0.5	0.3	0.3	1.2	0.8
4	0.2	0.8	0.4	1.5	1.1	0.6	1.0	0.8	0.3	0.2	1.1	1.3
5	0.7	1.2	0.1	1.3	0.5	0.6	0.6	0.7	0.8	0.2	0.8	0.7
6	0.2	1.3	0.9	1.4	0.7	1.1	0.7	0.5	1.0	0.0	1.1	0.1
7	0.0	0.5	1.5	1.2	0.5	0.6	0.5	0.5	0.8	1.5	1.0	0.9
8	0.5	1.2	1.4	1.0	0.2	1.0	0.5	0.2	0.6	1.6	0.4	1.7
9	0.2	1.2	1.2	1.0	1.4	0.7	0.8	0.6	0.9	1.3	0.9	1.5
10	1.0	1.2	1.3	1.0	1.4	0.5	0.4	0.5	1.2	1.4	0.0	1.3
11	1.1	1.2	1.2	0.8	1.0	0.7	0.4	0.9	1.4	0.9	0.4	1.1
12	0.9	1.3	1.2	1.1	1.0	0.7	0.3	0.9	1.3	0.8	1.1	0.5
13	0.8	0.9	1.6	1.4	0.1	0.7	0.3	1.5	1.4	1.2	1.6	0.2
14	0.8	0.7	1.4	0.8	0.8	1.3	0.2	0.6	1.1	1.0	1.6	0.7
15	1.0	0.2	1.0	0.5	1.0	1.1	1.0	1.1	1.3	0.8	1.2	1.2
16	1.0	0.0	1.0	0.3	0.9	0.8	1.1	1.3	1.8	1.1	0.6	0.5
17	0.5	0.3	0.9	0.5	1.1	1.4	1.1	1.0	1.5	1.7	1.1	1.0
18	0.3	0.6	0.9	1.7	0.9	1.6	1.1	0.2	1.1	1.5	0.4	1.1
19	1.1	0.6	0.5	1.0	0.5	1.3	0.7	0.6	1.7	1.5	0.3	1.2
20	0.5	0.2	0.7	1.5	0.3	0.4	0.6	1.3	1.7	1.0	0.9	0.6
21	1.2	0.7	0.4	1.4	0.1	0.6	0.3	1.6	1.7	0.8	0.5	0.4
22	1.6	1.5	1.5	1.2	0.3	0.4	1.2	1.3	1.7	1.0	0.9	1.4
23	1.1	1.7	1.2	0.7	1.2	0.3	1.1	1.1	1.5	0.7	0.9	0.8
24	0.5	1.4	1.0	1.3	0.9	0.3	0.3	1.0	1.3	0.1	0.9	0.1
25	0.3	1.0	0.9	1.3	0.7	1.4	0.9	1.4	1.8	0.0	1.0	0.1
26	1.1	0.9	0.9	0.8	1.5	0.7	1.3	1.3	1.6	1.0	0.7	0.0
27	0.8	1.6	0.6	0.7	1.2	0.8	1.1	1.2	1.6	0.5	0.1	0.9
28	1.0	1.6	0.1	0.5	0.3	0.8	1.3	1.0	0.6	1.9	1.0	1.8
29	0.6		1.2	0.7	0.7	0.7	0.7	0.8	1.2	0.6	1.2	0.5
30	0.9		0.7	0.1	0.8	0.6	0.8	0.6	0.4	0.5	0.7	0.6
31	1.6		0.6		0.6		1.5	0.9		0.0		1.5

TABLE 5 MEAN K AND C FIGURES BY MONTHS 1951
(Dependent only on data of tables 2 and 4 resp.)

Month	Mean Kw								Monthly Mean Kw	Mean C
Jan	2.41	2.21	2.19	2.15	2.38	2.55	2.89	2.85	2.45	0.77
Feb	2.81	2.55	2.38	2.53	2.56	2.68	3.12	3.10	2.72	0.90
Mar	2.49	2.51	2.63	2.94	2.95	2.86	2.93	2.78	2.76	0.90
Apr	3.26	2.86	2.73	2.87	3.09	3.13	2.90	3.26	3.01	1.00
May	2.74	2.46	2.47	2.63	2.62	2.62	2.72	2.84	2.64	0.85
Jun	2.62	2.54	2.46	2.37	2.69	2.73	2.44	2.56	2.55	0.82
Jul	2.65	2.69	2.65	2.73	2.65	2.86	2.62	2.73	2.70	0.84
Aug	2.80	2.69	2.80	2.78	2.91	2.96	2.98	3.09	2.88	0.92
Sep	3.61	3.21	3.13	3.14	3.44	3.33	3.38	3.53	3.35	1.13
Oct	2.64	2.42	2.39	2.76	2.58	2.63	2.90	2.85	2.64	0.84
Nov	2.62	2.33	2.17	2.27	2.69	2.79	3.08	2.96	2.61	0.82
Dec	2.44	2.42	2.13	2.59	2.68	2.74	2.94	2.97	2.61	0.84
Year	2.76	2.57	2.51	2.65	2.77	2.82	2.91	2.96	2.74	0.89

TABLE 6 MEAN K AND C FIGURES BY YEARS FROM 1940 TO 1951

Year	Mean Kw								Annual Mean Kw	Mean C
1940	2.12	2.05	1.95	2.09	2.24	2.29	2.34	2.22	2.16	0.73
1941	2.21	2.14	2.20	2.28	2.31	2.34	2.39	2.35	2.28	0.70
1942	2.14	2.08	2.13	2.29	2.38	2.37	2.28	2.22	2.24	0.65
1943	2.40	2.35	2.49	2.60	2.53	2.48	2.42	2.36	2.45	0.71
1944	1.96	1.87	1.93	2.04	2.06	2.03	1.96	1.95	1.98	0.53
1945	1.84	1.78	1.82	1.97	2.02	2.00	1.95	1.89	1.91	0.47
1946	2.18	2.18	2.32	2.41	2.50	2.43	2.35	2.25	2.33	0.61
1947	2.29	2.29	2.38	2.52	2.57	2.59	2.46	2.39	2.44	0.69
1948	2.21	2.10	2.09	2.28	2.41	2.44	2.37	2.37	2.29	0.71
1949	2.17	1.99	1.99	2.15	2.22	2.26	2.22	2.24	2.16	0.65
1950	2.43	2.28	2.18	2.35	2.36	2.50	2.59	2.54	2.40	0.74
1951	2.76	2.57	2.51	2.65	2.77	2.82	2.91	2.96	2.74	0.89

TABLE 7 MAGNETICALLY SELECTED DAYS 1951

Month	5 Quiet Days					5 Disturbed Days					10 Quiet Days									
Jan	4	6	7	9	18	2	21	22	23	31	4	6	7	8	9	17	18	20	24	25
Feb	2	3	15	16	20	22	23	24	27	28	2	3	4	7	15	16	17	18	20	21
Mar	2	4	5	21	28	7	10	13	14	22	2	3	4	5	19	20	21	28	30	31
Apr	1	15	16	28	30	3	4	6	13	18	1	11	15	16	17	23	27	28	29	30
May	8	13	20	21	22	1	2	9	10	26	5	7	8	13	19	20	21	22	28	31
Jun	10	20	22	23	24	6	17	18	19	25	4	5	10	20	21	22	23	24	29	30
Jul	10	12	13	14	24	2	3	26	28	31	7	8	10	11	12	13	14	20	21	24
Aug	3	8	10	18	30	1	13	20	21	25	3	6	7	8	9	10	14	18	19	30
Sep	1	2	3	4	30	16	20	21	22	25	1	2	3	4	5	7	8	9	28	30
Oct	4	6	24	25	31	8	17	18	19	28	1	3	4	5	6	24	25	27	30	31
Nov	1	10	18	19	27	3	13	14	15	29	1	8	10	11	16	18	19	21	26	27
Dec	6	13	24	25	26	8	9	22	28	31	6	12	13	16	21	24	25	26	29	30

TABLE 8 STORM SUDDEN COMMENCEMENTS (S.S.C.'S) 1951

Sudden commencements followed by a magnetic storm or a period of storminess. Very important cases are marked by an asterisk.

January

21d 10h 57m Co So Le Do Si Es Lo Wi Ch SM Tl Tu Ks SJ Te Ho El Tn
Hr Wa. Doubtful: Tr RS Fu Ka Ta Va Ap Pi To Am. s.i.: CF.

February

05d 04h 24m RS Wi Eb Tl Ks Te Ka El Tn Wa To Am. Doubtful: So Lo Wn
CF Fu SM Ap Hr.

22d 06h 11m Do Wi Fu Tl Ks Te Ta Hu Va El Ap Pi Tn Hr Wa. Doubtful:
Co Si Lo CF Ch Eb Tu SJ Ka Ho Am.

*27d 00h 28m Co So Do Si Lo Wn Wi Ab Ni Ch Fu SM Eb Tl SF Tu Ks SJ Ka
Ta Ho Hu Va El Ap Pi Tn Hr Wa To Am. Doubtful: Tr Le CF.

28d 14h 17m So Le Do Lo Wn Wi Ab Ni Fu SM Ks Te El Ap Tn Wa Am.
Doubtful: CF Eb Ta Hr. s.i.: Tr Ka Va To.

March

06d 07h 50m Tr So Le Do Es Lo Wn Wi Ni Fu SM Eb Tl SF Ks Te Ka Hu Va
El Ap Pi Tn Hr Wa To Am. Doubtful: RS Ta. s.i.: Ab CF Ch
Tu Ho

07d 12h 27m So Lo Do Wn Wi SM Te Va El Tn Wa. Doubtful: Le Es Ab Fu
Ks. s.i.: CF Ch Eb Tl Tu Ka Ho Pi Hr. p.s.c.: Am.

16d 10h 04m Tr Le Do Es Lo RS Wn Wi Fu SM Ks Te Ta Hu Va El Ap Tn Wa
Am. Doubtful: So CF Tl Tu Ka Ho Hr To. s.i.: Ab Ch Eb.

April

12d 21h 55m Do Wi Fu SM Eb Tl SF Ks Te Ta Va El Ap Tn Hr Wa Am.
Doubtful: Lo CF. s.i.: Ab Ch Tu SJ Ka Ho.

*18d 06h 52m Co So Le Do Si Es Lo Wn Wi Ab Ni CF Ch Fu SM Eb Tl SF Tu
Ks SJ Te Ka Ta Ho Hu Va El Ap Pi Tn Hr Wa To Am.
Doubtful: RS. s.i.: Tr.

May

09d 17h 50m Wi SM Tl SF Te Ta Va El Ap Pi Tn. Doubtful: Le Do Es Lo
Fu Eb Ka Hu Hr Wa Am. p.s.c.: Ab.

25d 18h 48m Co Le Do Si Es Lo Wn Wi Ab Ni CF Ch SM Eb Tl SF Tu Ks SJ
Te Ka Ta Ho Hu Va El Ap Pi Tn Hr Wa Am. Doubtful: Tr.

30d 08h 53m Co So Do Si Wi Ch SM Tu Ks SJ Te Ka Ta Ho El Ap Tn Hr Wa.
Doubtful: Lo Ab To. p.s.c.: Pi Am. s.i.: Tr.

June

*14d 17h 51m Tr Co So Le Do Si Es Lo RS Wn Wi Ab Ni CF Ch Fu SM Eb Tl
SF Tu Ks SJ Te Ka Ta Ho Hu Va El Ap Pi Tn Hr Wa To Am.

*17d 17h 02m Tr Co So Le Do Si Es Lo Wn Wi Ab Ni CF Ch Fu SM Eb Tl SF
Tu Ks SJ Te Ka Ta Ho Hu Va El Ap Pi Tn Hr Wa To Am.
Doubtful: RS.

18d 23h 14m Co So Do Si Es Lo Wn Wi Ab Ni CF Ch Fu Eb Tl SF Tu Ks SJ
Te Ta Ho Va El Pi Hr Wa Am. Doubtful: Le Ka To. p.s.c.:
Hu. s.i.: Tr.

*25d 04h 28m Tr Co So Le Do Si Es Lo RS Wn Wi Ab Ni CF Ch Fu SM Eb Tl
SF Tu Ks SJ Te Ka Ta Ho Hu Va El Ap Hr Wa To Am. p.s.c.: Pi.

July

*01d 22h 28m Co Le Do Si Es Lo RS Wn Wi Ab Ni CF Ch Fu SM Eb Tl SF Tu
Ks SJ Te Ka Ta Ho Hu Va El Ap Pi Hr Wa To Am. Doubtful:
Tr.

31d 00h 59m Co Do Si Es Wi Ni CF Ch Fu SM Eb Tl SF Tu SJ Te Ka Ta Ho
Hu El Ap Pi Hr Wa Am. Doubtful: So Wn Ab Ks. p.s.c.: Va.

TABLE 8 STORM SUDDEN COMMENCEMENTS (S.S.C.'S) - continued

<u>August</u>	
01d 15h 41m	Le Do Lo Wi Ni CF Ch Fu SM Eb Tl Tu Ks SJ Te Ta Va El Ap Pi Tn Hr Wa Am. Doubtful: Es Wn Ab Ka.
13d 03h 37m	Do Wi Ni Fu SM Eb Tl SF Ks Te Ta El Ap Tn Hr Wa Am. Doubtful: So Lo RS Wn Ab CF Ka. p.s.c.: Hu Va Pi.
*15d 20h 10m	So Le Do Si Es Lo RS Wn Wi Ab Ni Ch Fu SM Eb Tl SF Tu Ks SJ Te Ka Ta Ho Hu El Ap Pi Tn Hr Wa To Am. Doubtful: CF. s.i.: Va.
16d 22h 00m	Do Wi Fu SM Eb Tl Ks Te El Tn Hr Wa Am. Doubtful: Co Si Lo RS Ab Ni Ch SF SJ Ka Ta Ho Ap. p.s.c.: Va.
<u>September</u>	
*05d 20h 45m	Co So Le Do Si Es Lo RS Wn Wi Ab Ni CF Ch Fu SM Eb Tl SF Tu Ks SJ Te Ka Ta Ho Hu El Ap Tn Hr Wa To Am. Doubtful: Tr. p.s.c.: Pi. s.i.: Va.
19d 08h 42m	So Do Lo Wi SM Ks Te Ka Ta Hu Va El Ap Pi Tn Hr. Doubtful: Le CF Fu Eb Wa Am. s.i.: Tr Ch Tu SJ Ho.
*27d 00h 05m	Co So Do Si Lo RS Wn Wi Ab Ni CF Ch Fu SM Eb Tl SF Tu Ks SJ Te Ka Ta Ho Hu Va El Ap Pi Tn Hr Wa To Am. Doubtful: Le Es. p.s.c.: Tr.
<u>October</u>	
*28d 11h 54m	Tr Co So Le Do Si Es Lo RS Wn Wi Ab Ni Ch Fu SM Ci Eb Tl SF Tu Ks SJ Te Ka Ta Ho Hu Va El Ap Pi Tn Hr Wa To Am. s.i.: CF.
<u>November</u>	
n o n e	
<u>December</u>	
*27d 21h 36m	Tr So Le Do Es Lo RS Wn Wi Ab Ni CF Ch Fu SM Ci Eb Tl SF Tu SJ Te Ka Ta Hu El Ap Tn Hr Wa To Am. Doubtful: Va.

TABLE 9 POLAR OR PULSATONAL SUDDEN COMMENCEMENTS (P.S.C.'S)

Sudden commencements of a pulsation or a bay-disturbance.
Note. It is not quite certain that the list of p.s.c.'s is complete, as it may be that a p.s.c. has been selected by the observatories out of a great many p.s.c.-like disturbances, which all occurred on the same day. It therefore seems better not to use this list for statistical purposes.

<u>January</u>	
06d 19h 20m	Tr So Lo RS Wn Wi Ni CF Fu SM Ka Ta El Hr. s.i.: Hu.
11d 00h 53m	RS Wn Wi Ab Ni CF Fu SM Tl Ks Te Ka Ta El Hr. Doubtful: Do Lo Ch Eb Tu SJ Wa.
16d 21h 15m	Do RS Wn Wi Ab CF Fu SM Tl Ks Ta El Hr Wa. Doubtful: Ch SJ Te.
23d 18h 25m	RS Wi Ab Ni CF Fu SM Ks Ta El Tn Hr Wa. Doubtful: Do Wn Eb Tl Te. s.s.c.: So.
<u>February</u>	
04d 10h 53m	Co Si Ch Tu SJ Te Ka Ho El Wa To Am. Doubtful: SM.
05d 23h 53m	Do Wi Ab CF Ch Tl Tu Ks SJ Te Ta El Tn Hr. Doubtful: RS Fu SF Ka.
08d 18h 24m	Le Do Wi Ab Ni CF Fu SM Tl SF Ks Te Ta Hu El Hr Wa. Doubtful: Es Lo Wn Ka.

TABLE 9 POLAR OR PULSATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

(February)

11d 23h 59m	Do Wi CF Ch Eb SJ Te Pi Tn Hr Wa. Doubtful: Lo Wn Fu Ta.
13d 19h 13m	Tr So Do Lo RS Wn Wi Ab CF Fu SM Tl Ks Ka Ta El Tn Hr . Doubtful: Le Es Eb Te.
14d 18h 06m	So Do RS Wn Wi Ab Ni CF Fu SM Tl Ks Ta El Tn Hr Wa. Doubtful: Lo Eb Ka.
15d 22h 42m	Tr So Le Do Es Lo Wn Wi Ab Ni CF Fu SM Eb Tl Ks Te Ta El Tn Wa. Doubtful: RS Ch Tu SJ Hr.
25d 21h 22m	Do Lo Wn Wi Ab Ni CF Fu SM Eb Tl Ks Te Ta El Pi Tn Hr. Doubtful: Es Ch SF Tu SJ Ka Wa.

March

04d 22h 13m	Le Wn Wi Ab Ni CF Fu SM Eb Tl Ks Te Ta El Tn Hr. Doubtful: Es Lo Ka Hu Va Wa.
06d 19h 48m	So Do Lo RS Wn Wi Ab Ni SF Fu Ta El Tn Hr. Doubtful: Tr Eb Ka Hu Va Pi.
12d 19h 30m	So Le Do Es Lo Wn Wi Ab CF Fu SM Tl Ks Te Ta El Tn Hr. Doubtful: Tr RS Eb Ka.
21d 21h 07m	Do Wn Wi Ab CF Fu SM Eb Te Ta El Pi Tn Hr Wa. Doubtful: So Lo RS Tl Ka To.
24d 16h 04m	Do Wn Wi Fu Ks Ka Ta Va El Pi Tn Hr Wa. Doubtful: Lo RS CF SM Tl.
24d 19h 05m	Do Wi Ab Ni CF Fu SM Tl Ks Te Ta El Pi Tn Hr. Doubtful: Lo RS SF Wa To.
26d 22h 08m	So Do RS Wn Wi Ab Ni CF Fu SM Tl El Tn. Doubtful: Lo Te Ka Ta Hr.

April

04d 23h 43m	Co Do Si Wn Wi Ab Ch Fu Tl Tu Ks Te El Pi Hr. Doubtful: Lo CF Ka Wa.
06d 23h 23m	Do Wn Wi Ab Fu Eb Tl Ks Te Ta El Tn Hr. Doubtful: Le Es Lo Ka Pi Wa.
07d 23h 35m	Do Lo Wn Wi Ab CF Fu Eb Tl Ks Te Ta Va El Tn Hr. Doubtful: RS Ka.
08d 22h 04m	Do RS Wn Wi Ab CF Fu SM Eb Tl Te Ta El Tn Hr. Doubtful: Es Lo Ka.
10d 01h 14m	Le Do RS Wn Wi Ab Ni CF Fu SM Eb Tl Te Ta Hu Va El Hr. Doubtful: Es Lo Ch SF Tu SJ Ka Pi Tn.
11d 23h 07m	Le Do Wn Wi Ab Ni CF Fu Eb Tl SF Ta Va El Pi Hr Wa. Doubtful: Lo RS Ch Ka Tn.
18d 23h 25m	Do Wn Wi Ab CF Fu Tl SF Ks Ta El Pi Tn Hr. Doubtful: Lo RS Eb Ka Va.
21d 23h 30m	Do Wn Wi Ab CF Ch Fu SM Eb Tl Ks Te Ta El Tn Hr. Doubtful: Lo Ka.
26d 00h 24m	Le Do Es Wi Ab Fu SM Tl Te Ta Va El Tn Hr. Doubtful: Lo RS CF Ka.

May

01d 20h 59m	Do Lo Ab Ni Ch Fu SM Eb Tl SF Ks Te Ta El Tn Hr Wa. Doubtful: Le Es Wi CF Tu Ka Am. s.i.: Wn.
04d 19h 38m	Do Es Wn Wi Ab CF Fu SM Tl Te Ta Va El Pi Tn Hr. Doubtful: Le Lo.
05d 23h 23m	Tr So Do Lo RS Wn Wi Ab Ni CF Fu SM Eb Tl Ks Te Ka Ta Va El Tn Hr Wa. Doubtful: Le Es.

TABLE 9 POLAR OR PULSATIONAL SUDDEN COMMENCEMENTS (P,S.C.'S)-continued

(May)

06d 19h 02m	Tr Do Lo Wn Wi Ab Ni CF Fu SM Tl Ks Ta Va El Tn Hr. Doubtful: Le Es RS Eb. s.s.c.: So.
09d 22h 42m	Do Wi Ab Ni Fu SM Eb Tl Ks Te Ta Va El Tn Hr Wa. Doubtful: Tr Le Es Lo RS CF Tu Ka. s.i.: Wn.
14d 21h 08m	Do Wn Wi CF Fu SM Eb Tl Ks Te Ta Va El Hr. Doubtful: Lo Tn.
17d 01h 35m	Do Lo RS Wn Wi Ab CF Fu SM Tl SF Te Ta Va El Pi Tn Hr. Doubtful: Es Eb Ka To.
18d 23h 22m	Tr Do Wn Wi Ab CF Fu Eb Tl Ks Ta Va El Tn Hr. Doubtful: Lo RS Ka.
21d 23h 18m	Do Wn Wi Ab CF Fu Eb Tl Ks Ta Va Pi Tn Hr. Doubtful: Lo RS Ka.
28d 05h 33m	So Le Do Es Wi Ni CF Fu Tl Ks Te Ta Va El Pi Tn Hr Wa Am. Doubtful: Ab SM Eb. s.i.: Tr Co Si Lo Wn Ch Tu SJ Ka Ho Hu Ap To.
29d 22h 35m	Tr So Le Do Es Lo RS Wn Wi Ab Ni CF Fu SM Eb Tl Ks Ta Va El Tn Hr Wa Am. Doubtful: Ka.
31d 09h 25m	So Do Ni Fu SM Ks Te Ta Va El Ap Pi Tn Wa To. Doubtful: Lo RS Ab CF Ka Hr Am. s.i.: Wi Ch Tu SJ Ho.

June

03d 00h 07m	Tr Wn Wi Ab Ni CF Fu SM Eb Tl Ks Te Ta Va El Tn Hr. Doubtful: Do Lo RS Wa Am.
12d 20h 27m	So Do RS Wn Ab Ni CF Fu SM Ks Te Ka Ta El Tn Hr Wa. Doubtful: Tr Lo Eb Tl.
13d 21h 35m	Tr So Do Lo RS Wn Wi CF Fu Ks Va El Tn Hr. Doubtful: Le Es Tl Ka Wa.
20d 22h 55m	Tr So Le Do Es Lo RS Wn Ab Ni CF FuEb Tl SF Ks Te Ta Va El Pi Hr Wa. Doubtful: SM Ka.
30d 19h 33m	Tr Do Lo RS Wn Wi Ab Ni CF Fu SM Eb Tl Ks Te Ka Ta Va El Pi Hr. Doubtful: So Es Wa.

July

01d 17h 45m	Le Do Es Lo RS Wn Wi Ab Ni CF Fu SM Tl Ks Te Ta El Pi Hr Wa. Doubtful: So Eb Ka.
07d 20h 14m	So Le Do Es Lo Wn Wi Ab Ni CF Fu Eb Tl Ta El Pi Hr. Doubtful: RS SM Ka.
11d 19h 51m	So Le Do Es Wn Wi Ab Ni Cf Fu SM Eb Ks Ka Ta El Hr Wa. Doubtful: Lo RS Tl.
15d 22h 15m	So Do Lo Wn Ni CF Fu SM Ks Te Ta El Hr Wa. Doubtful: Co Si RS Ab Ch Eb Tl Tu SJ Ka.
30d 18h 31m	Do Lo RS Wn Wi Ni CF Fu SM Va El Pi Hr Wa. Doubtful: Le Es Te Ta. s.i.: Tr So Ab.

August

06d 00h 28m	Do RS Wn Wi Ab Ni Fu Eb Tl Ka Ta El Pi Tn Hr. Doubtful: Le Es Lo SF Te Va.
09d 21h 02m	Tr So Le Lo RS Wn Wi Ab Ni Fu Eb Ks Te Ta El Tn Hr Wa. Doubtful: Do Es CF Tl Ka.
20d 00h 57m	Le Do Es Lo RS Wn Wi Ab Ni CF Fu SM Eb Tl SF Ks Te Ta Va El Pi Tn Hr. Doubtful: Co So Si Tu Ka.
21d 00h 46m	Do RS Ab Ni CF Fu SM Eb Te Ta Hu Va El Pi Tn Hr. Doubtful: Lo Tl Ks Ka Wa.
23d 22h 22m	Do Wn Ab Ni CF Ch Fu SM Tl Ks Ta Hu El Tn Hr. Doubtful: Lo RS Eb SF Tu Wa.

TABLE 9 POLAR OR PULSATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

(August)

26d 22h 00m	Do Lo Wn Wi Ab Ni CF Fu SM Eb Ks Ta El Tn Hr. Doubtful: Tr Es RS Te Ka.
27d 20h 40m	Le Do Es RS Wn Ab Ni CF Fu Tl Ks Te Ka Ta El Tn Hr Wa. Doubtful: So Lo SM.
28d 20h 10m	So Do Lo RS Wn Wi Ni CF Fu Ks El Pi Hr. Doubtful: Ab SM Eb Tl Te Ka Ta Tn.
29d 21h 19m	Tr So Le Do Lo RS Wn Wi Ab Ni CF Fu SM Eb Tl Ks Te Ta Va El Tn Hr Wa. Doubtful: Es Ka.s.i.: Am.
29d 21h 48m	So Do Wn Wi Ab CF Fu SM Eb Ta El Tn Hr. Doubtful: Lo Te Ka Wa.
30d 22h 27m	Do Wn Wi Ab CF Fu SM Eb Tl Ta El Pi Tn Hr. Doubtful: Lo RS Te Ka.
31d 22h 08m	So Do Lo RS Wn Wi Ab Ni CF Fu SM Eb Ks Te Ta El Tn Hr. Doubtful: Tr Tl Ka.

September

01d 21h 25m	Tr So Le Do Es Lo RS Wn Wi Ab Ni CF Fu SM Eb Tl SF Ks Te Ta Va El Tn Hr. Doubtful: Ka.
06d 19h 15m	So Do Lo RS Wn Wi Ni CF Fu SM Eb Te Ta El Tn Hr Wa. Doubtful: Ab Tl Ka Va.
07d 19h 02m	Tr Do Lo RS Wn Wi Ab Ni CF Fu SM Tl Ks Ka Ta El Tn Hr Wa. Doubtful: Te.
08d 18h 00m	Tr Do Lo RS Wn Ab Ni Fu SM Ks Ta El Pi Tn Hr Wa. Doubtful: Ka.
10d 02h 18m	Co Do Si Ch SM Tu Ks SJ Te Ho Va El Pi Tn Wa. Doubtful: Lo SF Ka Hr. s.i.: Ap Am.
11d 21h 14m	Do Lo Wi Ab Ni Ch Fu SM Eb Tl SF Ks Ta El Tn Hr Wa. Doubtful: Es Te Ka Va. s.i.: Wn.
12d 19h 34m	Tr Do Lo RS Wn Wi Ab Ni Fu SM Ks Ta El Tn Hr Wa. Doubtful: Tl Te. s.s.c.: So.
16d 20h 48m	Tr Do Lo RS Wi Ab Ni CF Ch Fu SM Eb Tl Tu Ks Te Ta Va El Pi Tn Hr Wa Am. Doubtful: Es SJ Ka To. s.i.: Le Wn.
17d 21h 33m	Tr Le Do Lo RS Wi Ab Ni CF Ch Fu SM Eb Tl Ks Te Ta Va El Tn Hr Wa. Doubtful: Es SF Ka Am. s.i.: Wn.
18d 17h 31m	Do Lo RS Wn Ab Ni CF Fu SM Ks Ta El Tn Wa. Doubtful: Tr Le Es Eb Te Ka Hr. s.s.c.: So.
24d 20h 05m	Tr Do Lo Wn Ab CF Fu SM Tl Ks El Tn Hr. Doubtful: RS Ka.
29d 16h 40m	Le Do Es Lo RS Wi Ab Ni CF Fu SM Eb Ta Hu El Tn Hr Wa. Doubtful: Tl Te Ka Am.

October

02d 21h 12m	Tr So Le Do Es Lo RS Wn Wi Ab Ni SM Ci Eb Tl Ks Ta El Tn Hr.
03d 20h 21m	Tr So Le Do Es Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Tl Ks Te Ta El Tn Hr. Doubtful: Ka.
04d 19h 04m	Tr So Do Lo RS Wn Wi Ab Ni CF Fu Eb Tl Ks Ta El Pi Tn Hr Wa. Doubtful: Le Ka.
04d 19h 48m	Do Wn Wi Ab CF SM Eb Tl Ks Te Ka Ta El Pi Tn Hr. Doubtful: Tr So Lo.
07d 02h 42m	So Do Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Tl Te Ka Ta El Tn Hr Am. Doubtful: Le Es.
08d 22h 27m	Do Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Te Ta Va El Tn Hr. Doubtful: So Tl Ks.

TABLE 9 POLAR OR PULSATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

(October)

09d 21h 16m	Le Do Es Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Tl Ks Te Ka Ta El Tn Hr. s.i.: Tr.
13d 23h 05m	Do Ab CF Ch Fu SM Tl Ks Te Ta Va El Tn Hr Wa. Doubtful: Lo Wn Eb Ka.
14d 19h 04m	Le Do Lo Wn Wi Ab Ni CF Fu SM Ci Eb Tl SF Te Ka Ta Va El Pi Tn Hr Wa. Doubtful: So Es RS.
15d 23h 16m	Do RS Wn Wi Ab CF Fu SM Tl Ks Te Ta El Pi Tn. Doubtful: Lo Eb Ka Hr Wa.
18d 16h 34m	Do Lo RS Wi Ab Ni Fu SM Ci Ks Ka Ta El Tn Wa. Doubtful: Tr CF Te Hr.
20d 19h 36m	So Do Lo RS Ab Ni CF Fu SM Ci Ks Te Pi Wa . Doubtful: Tl Ka Ta Tn Hr.
22d 21h 42m	Tr Do RS Wn Wi Ab CF Fu SM Ci Ks Te Ta El Pi Tn Hr. Doubtful: Lo Eb Tl Ka.
26d 21h 13m	Le Do Es Lo Wi Ab Ni CF Fu SM Ci Eb Tl Ks Ta Va Tn Hr. Doubtful: Wn Ka Am.

November

03d 03h 00m	Co Do Si Ab Ni CF Fu SM Ci Tl Ks Ta El Pi Tn. Doubtful: Lo RS Eb Ka Hr.
03d 20h 32m	Do Lo Wi Ab Ni CF Fu SM Ci Eb Ks Te Ta Va El Pi Tn Hr. Doubtful: Es Tl Ka Wa. s.i.: Wn.
04d 20h 52m	Tr So Le Do Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Tl Ks Ta El Pi Tn Hr. Doubtful: Ka Wa.
04d 22h 17m	Tr Le Do Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Tl Ks Te Ta El Pi Tn Hr. Doubtful: Es SF Ka Wa.
05d 22h 41m	Le Do Wn Wi Ab Ni Cf Fu SM Ci Tl Ks Te Ta Pi Tn Hr. Doubtful: So Lo RS Eb Ka.
06d 18h 57m	So Le Do Es Lo Rs Wn Wi Ab Ni CF Fu SM Ci Tl SF Ks Ta El Pi Tn Hr. Doubtful: Ka Wa.
12d 00h 12m	So Do Lo Wn Ab CF Fu SM Eb Tl Ks Te Ta El Pi Tn. Doubtful: RS Hr.
14d 20h 45m	Do Lo Wi Fu SM Ci Eb Te Ta Va El Ap Tn Hr. Doubtful: CF Ch Ka. s.i.: Wn Ab Tl.
17d 19h 20m	Tr Le Do Es Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Tl Ks Te Ta Hu El Tn Hr. Doubtful: Ka Pi Wa. s.s.c.: So Am.
20d 22h 24m	Tr So Do Lo Wn Wi Ab Ni CF Fu SM Ci Eb Tl Ks Te Ka Ta El Tn Hr Wa.
24d 15h 14m	Lo Wn Wi Ab Ni CF Fu SM Ci Ks Ta Hu El Tn Hr Wa. Doubtful: So Le Do Es RS Eb Tl Te Ka To.
25d 21h 10m	Le Do Es Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Tl Ka Ta El Tn Hr. Doubtful: Tr SF. s.s.c.: So.

December

03d 01h 03m	Do RS Ab CF Fu SM Ci Eb Tl Ks Ta Va El Hr. Doubtful: Lo Wn SF Tn.
06d 19h 31m	Tr So Do Lo RS Wn Ni CF Fu SM Ci Ks Te Ta Va El Hr Wa. Doubtful: Ab Eb Tl Ka Tn.
08d 01h 11m	Le Do Es Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Tl SF Ks Te Ta El Tn Hr. Doubtful: Ka.
08d 19h 52m	Tr Do Lo Wi Ab Ni Fu SM Ci Eb Tl Ks Ta El Tn Hr. Doubtful: RS. s.i.: Wn CF.
11d 22h 52m	Le Do Es Lo Wn Wi Ab Ni CF Fu Ci Eb Tl SF Ks Te Ta Va El Tn Hr. Doubtful: Tr Ka Wa.

TABLE 9 POLAR OR PULSATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

(December)

14d 21h 42m	Tr Le Do Es Lo Wn Wi Ab Ni CF Fu SM Ci Eb Tl SF Ks Te Ta Va El Tn Hr. Doubtful: RS Ka Wa.
22d 20h 03m	Tr So Do Wi Ab CF Fu SM Ci Ks Te Ta El Tn Hr Wa. Doubtful: Lo RS Eb Ka. s.i.: Wn.
25d 22h 11m	So Do RS Wn Wi Ni CF Fu SM Ci Eb Tl Ks Ta El Hr. Doubtful: Tr Es Lo Ka Tn.
28d 23h 10m	Do Wn Wi Ab CF Fu SM Ci Eb Tl Ks Ta El Tn Hr. Doubtful: So Lo.
29d 20h 57m	Tr So Do Lo RS Wn Wi Ab CF Fu Ks Ta Hr. Doubtful: Le Eb Ka Tn.
30d 22h 16m	Tr Do Lo RS Wn Wi Ab Ni CF Fu SM Ci Eb Ka Ta Tn Hr Wa. Doubtful: Le Tl Ks. s.s.c.: So.

TABLE 10 SUDDEN GEOMAGNETIC CHANGES OR IMPULSES (S.I.'S)

This list cannot be considered as complete and can therefore better not be used for statistical purposes (see Cautionary Note at the head of Table 9).

January

02d 08h 38m	Ab SM Tl Ks Ta Va El Pi Tn Hr Wa Am. Doubtful: Do CF Ka.
02d 09h 39m	Tr So Le Do Es Lo RS Ab Ni CF SM Tl Ks Ka Ta Va El Ap Tn Hr Wa. Doubtful: Wi.
05d 12h 55m	Do SM Te Ka Ta Hu El Ap Pi Tn Hr Wa. Doubtful: Lo Fu Ks Va.
16d 15h 39m	Wi Ab CF SM Tl Ks Te Ta Hu Tn Hr. Doubtful: So Do Fu Pi.

February

05d 14h 25m	Do Es Wn Wi Fu SM Tl Ks Te Ka Ta Va El Tn Hr Wa Am. Doubtful: Co So Le Si Lo CF Ch Eb Tu SJ Ho.
06d 08h 13m	Do RS Wi Ab Ni CF Fu SM Eb Tl Te Ta Va El Pi Tn Wa Am. Doubtful: So Lo Wn Ka Hr To.
07d 00h 35m	So Do RS Wi Ab SM Tl Te Ka Ta Hu Va El Pi Tn. Doubtful: Lo Wn CF Ch Fu Hr. p.s.c.: Wa.
22d 07h 21m	Do Fu Tl Ks Te Ta Va El Pi Tn Hr Wa. Doubtful: So CF Eb Ka.

March

16d 15h 55m	Do Wi Ab Ni CF Fu SM Eb Ks Te Ta Hu Va Ap Pi Tn Hr Wa. Doubtful: So Lo RS Tl Ka.
22d 15h 41m	Do Wi SM Te Ka Ta Va El Pi Tn Hr Wa. Doubtful: So Lo CF Fu Tl Ks. s.s.c.: Ab.

April

18d 10h 27m	So Do RS Wn Wi Ab Ni CF Ch Fu SM Eb Tu SJ Te Ta Ho Va El Tn Hr Wa Am. Doubtful: Co Si Lo Ka Ap.
18d 17h 54m	Do Si Wi Ab CF Ch Fu SM Eb Tu SJ Te Ka Ta Ho Va El Tn Hr Wa Am. Doubtful: Lo Ks Ap.

May

n o n e

June

18d 15h 15m	Co So Do Si Wi Ab CF Ch Fu SM Tl Ks SJ Te Ka Ta Va El Pi Wa. Doubtful: Lo Eb Tu Ho Hr To.
-------------	--

TABLE 10 SUDDEN GEOMAGNETIC CHANGES OR IMPULSES (S.I.'S) - continued

July

n o n e

August

16d 15h 44m Do RS Wi Ab Ni CF Ch Fu SM Eb Tl Ka SJ Te Ta Va Pi Tn Hr
Wa. Doubtful: Lo Ka Ho. p.s.c.: El.

17d 07h 07m Co Si RS Ni CF Ch SM Eb Tl Ks SJ Te Ka Ta Ho Va El Ap Pi
Tn Hr Wa To Am. Doubtful: Do.

26d 13h 10m Do Wi Ab CF Fu SM Eb Ks Te Ta Hu El Pi Tn. Doubtful: Es
Tl Ka Hr.

26d 16h 50m Do Wi Ab CF Fu SM Eb Ks Te Ta Hu El Pi Tn Hr Wa.
Doubtful: Tl SF Ka Va.

September

06d 06h 11m Tr Co Do Si Lo RS Wn Wi Ab Ni CF Ch Fu SM Tu Ks SJ Te Ka
Ta Ho Hu Va El Tn Hr Am. Doubtful: Le Es Tl SF. p.s.c.:
Eb. s.s.c.: So Ap Wa To.

19d 14h 51m Do RS Wi Ab Fu SM Tl Te Ka Ta Va El Ap Tn Hr Wa To Am.
Doubtful: CF Eb Ks SJ.

22d 09h 10m Do Wi Ab Ni Fu SM Eb Tl Te Ta El Tn Hr Wa. Doubtful: Lo
RS Ka.

27d 07h 29m Do Lo RS Wi Ab Ni CF Fu SM Eb Tl SF Te Ka Ta Va El Pi Tn
Hr To Am. Doubtful: Tr Ks Ap Wa.

October

07d 13h 16m Do Wi CF Fu SM Ci Tl Te Ta El Pi Tn Hr Wa. Doubtful: So
Lo Wn Ab Eb Ka Ap Am.

17d 19h 25m Le Do Es Lo Wn Wi Ni Fu SM Ci Tl Ks Te Ta El Tn.
Doubtful: RS Ka Wa. p.s.c.: Ab CF Eb Hr.

19d 18h 15m Le Do Lo Wn Wi Ni Fu SM Ci Te Ta El Tn. Doubtful: Tr Es
RS Tl Ap Hr. p.s.c.: Ab CF Eb.

28d 19h 34m So Le Do Lo Wn Wi Ab Ni Ch Fu SM Ci Tl SJ Te Ka Ta Wa Am.
Doubtful: Es RS CF Ks Hr To. p.s.c.: Eb.

November

19d 20h 06m Do Ch SM Ci Tl Tu Ks SJ Te Ka Ho Va El Pi Tn Hr Wa To Am.
Doubtful: Tr Lo Wn Ab CF Fu Eb SF Ta Hu.

December

08d 18h 35m Le Do Es Lo Wn Wi Ab Ni Fu SM Ci Tl Te El Tn Hr.
Doubtful: So RS CF Eb Ka Am. p.s.c.: Ta.

27d 14h 45m Le Do Es Lo Wi Ab CF SM Ci Tl Te Ka Ta Hu Va El Tn Hr Wa
Am. Doubtful: So RS Wn SF To.

27d 21h 08m Do Wi Ab CF Ch Fu SM Ci Tl Tu SJ Te Ka Ta Ho Hu Va El Ap
Tn Hr Wa Am. Doubtful: Lo Wn To.

Starting-times of solar-flare effects checked by 33 observatories. Stations lying in the twilight-zone of the dark hemisphere are indicated by dotted brackets (). Stations in full dark, reporting a clear disturbance, are given in parentheses (). Observatories near the subsolar point are underlined. A simultaneous ionospheric disturbance has been indicated by underlining the time. Stations on the nightside of the earth, which gave a negative or doubtful answer, have been omitted. Strong effects are marked by an asterisk.

January

*22d 16h 25m Ch Tu(Ks) SJ Te Va Pi. Doubtful: (Co) (Si) Wi CF Hr.
No effect: Es Ab Eb Tl Ta Hu EL.

February

n o n e

March

01d 15h 18m Do Ch Eb SM Tu Ta Hu Va Pi. Doubtful: CF Tl (Ka).
No effect: Le Si Es RS Wn Wi Ab Ni Fu Ks Te El Hr.

02d 20h 55m Si Ch Tu Te Ho Hu Ap Pi. Doubtful: Am. No effect: Co Ka To.

April

20d 00h 50m Co Si (Ch) Tu Te Ka Ho Ap Am. Doubtful: To.

23d 13h 48m CF Eb Va El Pi. Doubtful: Do RS Ch Fu SM Tu Te Hr.
No effect: Co Le Si Wn Wi Ab Ni Tl Ks SJ Ta Hu.

25d 08h 45m Wi CF Ks Ta El. Doubtful: Do Wn SM Ka Hr. No effect: Le Es RS Ab Ni Fu Eb Tl Wa.

30d 17h 20m Co Si Wi CF Ch SM Tu SJ Te Ho Hu Va Pi. Doubtful: Wn.
No effect: Le Do Es RS Ab Ni Fu Eb Tl Ta Ap.

May

08d 15h 05m RS Wn Wi Ni CF Ch Fu Eb Tl Tu SJ Ta Hu Va El Pi Hr.
Doubtful: Co Le Si Es Te. No effect: Do Ab SM Ks.

14d 11h 30m Le Do Es Wn Wi Ni CF Ch Fu SM SJ Ta El Pi Hr. Doubtful: RS Eb Tl. No effect: Ab Ks Hu Va.

18d 20h 00m Co Si Ch SM Tu SJ Ho Hu. Doubtful: Eb Te Pi. No effect: Le Do Es Ka Va Am.

19d 19h 53m Co Si Ch Tu SJ Te Ho Pi. No effect: Le Do Es Ab SM Ka Hu Va Am.

20d 19h 55m Co Do Si (CF) Ch Tu SJ Ho Hu. Doubtful: Wi Tl. No effect: Le Es Ab Te Ka Va Pi Am.

21d 01h 50m Co Si Tu Ka Ho Ap Wa Am. Doubtful: To.

June

n o n e

July

04d 14h 00m CF SM Ks Ta. Doubtful: Fu Eb Tl Pi. No effect: Co Le Do Si Es Wn Wi Ab Ni Ch Tu SJ Hu Va El Hr.

August

n o n e

September

03d 12h 20m CF Eb Tl Ks (Te) El. Doubtful: RS Wi SM Ta Pi. No effect: Le Do Es Wn Ab Ni Fu SJ Hu Va Hr.

TABLE 11 SOLAR-FLARE EFFECTS (S.F.E.'S) - continued

(September)

15d 15h 08m SM Hu Va. Doubtful: Do Si Wi CF Ch Tu Pi Hr. No effect:
Le Es RS Wn Ab Ni Fu Eb Tl Ks SJ Te Ta El.

October

n o n e

November

06d 09h 40m Wn Wi Ni CF Fu SM Eb Tl Ks Ta El (Pi) Hr. Doubtful: Ab
Wa. No effect: Le Do RS Va.

December

n o n e

TABLE 11a DOUBTFUL SOLAR-FLARE EFFECTS (S.F.E.'S) 1951

Small bay-like disturbances resembling solar-flare effects.
Stations in the twilight-zone on the dark hemisphere are indicated
by dotted brackets (). Stations in full dark, reporting a clear
disturbance, are given in parentheses ().
Observatories near the subsolar point are underlined.

January

n o n e

February

26d 01h 55m Ka Ho Ap Wa Am. Doubtful: Co Si To.

March

01d 11h 10m CF (Te) El Pi Hr (Wa). Doubtful: Do Es Wi Ch Fu SM Eb Tl
Ks SJ Ta. No effect: Le RS Wn Ab Ni Hu.

April

n o n e

May

10d 09h 54m SM Eb (Te) Ta El Hr (Am). Doubtful: Wi CF Fu Tl.
No effect: RS Wn Ni Ks Va.

22d 00h 55m (Ni) (Ks) (SJ) (Ta) (El) Ap Wa Am. No effect: Co Si Tu
Te Ka Ho To.

June

16d 15h 44m CF SM Ks Hu Va El. Doubtful: Co Do RS Wi Ch Eb Tl Tu SJ
Ta. No effect: Le Si Es Wn Ab Ni Fu Te Pi Hr.

July

15d 14h 12m CF Eb El. Doubtful: Co Do Si Ch SM Tl Tu SJ Ka Ho.
No effect: Le Es Wn Wi Ab Ni Fu Ks Te Ta Hu Va Pi Hr.

August

n o n e

September

n o n e

October

n o n e

TABLE 11a SOLAR-FLARE EFFECTS (S.F.E.'S) 1951 - continued

November

n o n e

December

n o n e

TABLE 11b REJECTED SOLAR-FLARE EFFECTS 1951

Starting-times of presumed cases, presented by one or more observatories, which most probably do not represent real solar-flare effects.

January

01d 16h 27m- 02d 09h 40m- 08d 20h 42m- 14d 13h 49m- 14d 17h 17m-
16d 15h 21m- 20d 15h 42m- 31d 09h 55m- 31d 12h 13m.

February

05d 14h 25m- 10d 11h 11m- 12d 17h 29m- 14d 11h 21m- 16d 16h 16m-
21d 17h 24m- 22d 05h 19m- 22d 06h 11m- 22d 20h 50m- 24d 15h 15m-
25d 14h 00m- 27d 16h 31m- 28d 14h 16m.

March

01d 11h 57m- 12d 13h 06m- 12d 13h 49m- 16d 19h 16m- 17d 18h 50m-
20d 10h 41m- 20d 15h 22m- 22d 14h 50m- 28d 12h 20m- 29d 03h 04m-
30d 14h 03m.

April

01d 17h 30m- 10d 13h 54m- 12d 17h 30m- 17d 18h 42m- 18d 23h 50m-
20d 01h 50m- 20d 22h 26m- 25d 01h 49m- 30d 06h 40m- 30d 14h 20m-
30d 15h 43m.

May

05d 18h 03m- 21d 23h 05m- 23d 19h 41m.

June

01d 13h 27m- 09d 21h 30m- 13d 05h 47m- 13d 07h 10m- 18d 14h 48m-
20d 14h 10m- 20d 17h 16m- 21d 09h 10m- 22d 08h 51m- 22d 11h 40m-
26d 17h 10m- 27d 16h 06m.

July

01d 15h 00m- 01d 17h 55m- 06d 16h 05m- 09d 22h 11m- 31d 20h 08m.

August

10d 14h 56m- 14d 10h 42m- 14d 11h 08m- 18d 07h 40m- 29d 15h 06m-
29d 21h 46m.

September

09d 19h 35m- 15d 06h 50m- 21d 11h 04m- 23d 22h 39m- 25d 09h 35m.

October

01d 10h 04m- 04d 14h 00m- 04d 17h 29m- 09d 12h 52m- 12d 11h 15m-
13d 11h 27m- 13d 23h 15m- 17d 06h 30m- 18d 00h 26m- 21d 09h 14m-
24d 15h 30m- 24d 19h 18m- 25d 19h 37m- 29d 12h 55m- 30d 15h 00m.

November

01d 18h 36m- 01d 23h 21m- 02d 00h 12m- 02d 12h 30m- 10d 15h 00m-
17d 19h 05m- 19d 20h 05m- 28d 06h 00m.

December

08d 11h 30m- 15d 14h 17m- 15d 16h 03m- 16d 20h 17m- 24d 18h 30m.

TABLE 13 MAGNETOGRAMS RECOMMENDED FOR REPRODUCTION, 1951

The observatory Wn draws the attention to the following cases of typical s.s.c.'s and p.s.c.'s.

s.s.c.	1951 Jun	14d	17h	51m
s.s.c.	Aug	15d	20h	10m
s.s.c.	Sep	05d	20h	45m
p.s.c.	May	29d	22h	35m
p.s.c.	Aug	20d	00h	57m
p.s.c.	Aug	29d	21h	19m
p.s.c.	Oct	02d	21h	12m

The following periods are recommended for reproduction by the observatory Ab.

1951	Feb	23d	16h - 24d	02h
	Feb	26d	23h - 27d	06h
	Mar	13d	16h - 14d	02h
	Apr	18d	04h - 19d	04h
	<u>Jun</u>	<u>17d</u>	<u>16h - 18d</u>	<u>16h</u>
	<u>Jul</u>	<u>01d</u>	<u>17h - 02d</u>	<u>17h</u>
	Sep	16d	02h - 17d	02h
	Sep	19d	11h - 23d	11h
	<u>Sep</u>	<u>25d</u>	<u>10h - 26d</u>	<u>10h</u>
	<u>Oct</u>	<u>28d</u>	<u>03h - 29d</u>	<u>03h</u>

Underlined are periods with important magnetic storms.

The observatory Hr recommends:

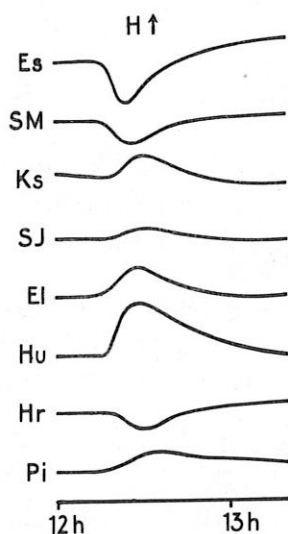
1951 Jan 21d (unusual movement following an inverted s.s.c. at 10h 57m)
 May 09d (unusually large polar bay at 22h 42m)
 Nov 06d (s.f.e. at 09h 42m and p.s.c. at 18h 57m)

TABLE 12 IONOSPHERIC DISTURBANCES WITHOUT CLEAR GEOMAGNETIC EFFECT

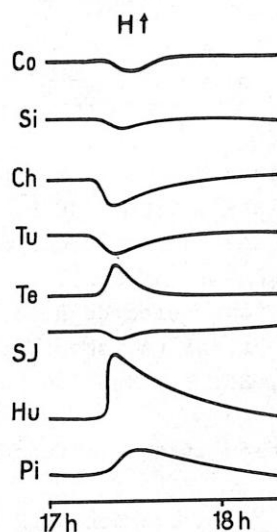
<u>January</u>	<u>July</u>
n o n e	n o n e
<u>February</u>	<u>August</u>
19d 14h 00m: Wn Wi CF Hu Hr	10d 13h 10m: Wi
24d 14h 30m: Wi Hu	14d 10h 26m: Wn
<u>March</u>	<u>September</u>
24d 11h 28m: Wi	03d 12h 50m: Wi Hu
<u>April</u>	07d 10h 54m: Wn Wi Hr
02d 17h 11m: Wi Hu	14d 13h 46m: Wn Wi
19d 08h 54m: Wn	<u>October</u>
19d 15h 05m: Wi	n o n e
<u>May</u>	<u>November</u>
15d 11h 20m: Wi	29d 12h 15m: Ni
17d 15h 30m: Wi Hu	<u>December</u>
18d 10h 20m: Wi	15d 12h 58m: Wi Hu
19d 12h 15m: Wi	
19d 13h 45m: Wi	
22d 09h 10m: Wn Wi Hr	
22d 13h 37m: Wn Wi	
23d 10h 40m: Wn Wi Hr	
<u>June</u>	
19d 05h 45m: Wi	
19d 12h 59m: Wi Hu	
19d 16h 22m: Hu	
24d 14h 00m: Hu	
26d 15h 59m: Hu	

TABLE 14 THREE IMPORTANT SOLAR-FLARE EFFECTS.

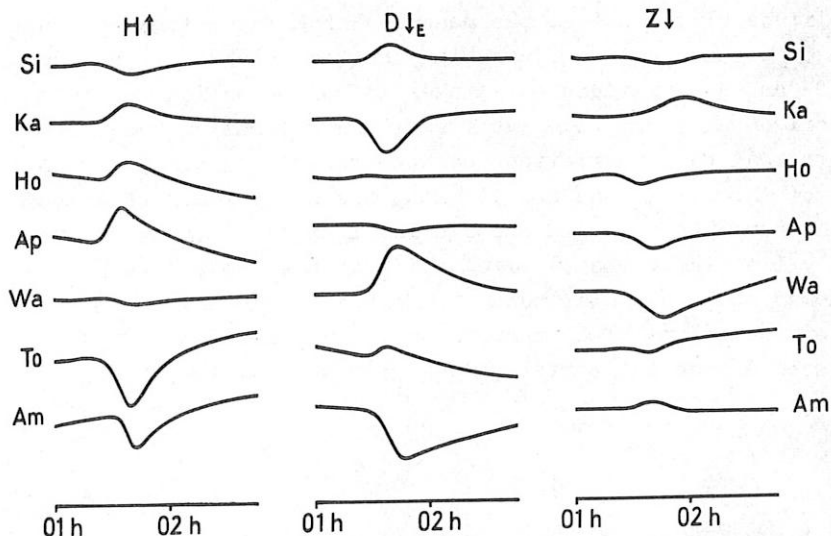
1949 Feb. 01 d 12 h 19 m



1949 Sep. 17 d 17 h 16 m



1950 Feb. 17 d 01 h 20 m



Drawings of three important s.f.e.'s. Directions of increasing horizontal intensity H , easterly declination D and vertical intensity Z , are indicated by arrows. Scale of gammas for H , D and Z in centre.

TABLE 15 FOUR SELECTED S.F.E.'S 1950.

Vector drawings of the overhead sheet-currents necessary to produce strong solar-flare effects (1950) at the time of maximum intensity (full arrows), and current-vectors of the normal daily variation at the same time (dashed arrows).

Data on the four selected s.f.e.'s were received from the following observatories: Tr, Ai (Abisko), Co, Le, Lo, Si, RS, Es, Wn, Wi, Ni, Ab, Na, Eb, Tl, Ch, SM, Ka, Ks, Tu, He, Ho, Te, SJ, El, Hu, Ap, Va, Wa, Hr, To, Am.

No vector drawn at the station means that the s.f.e. was not observed.

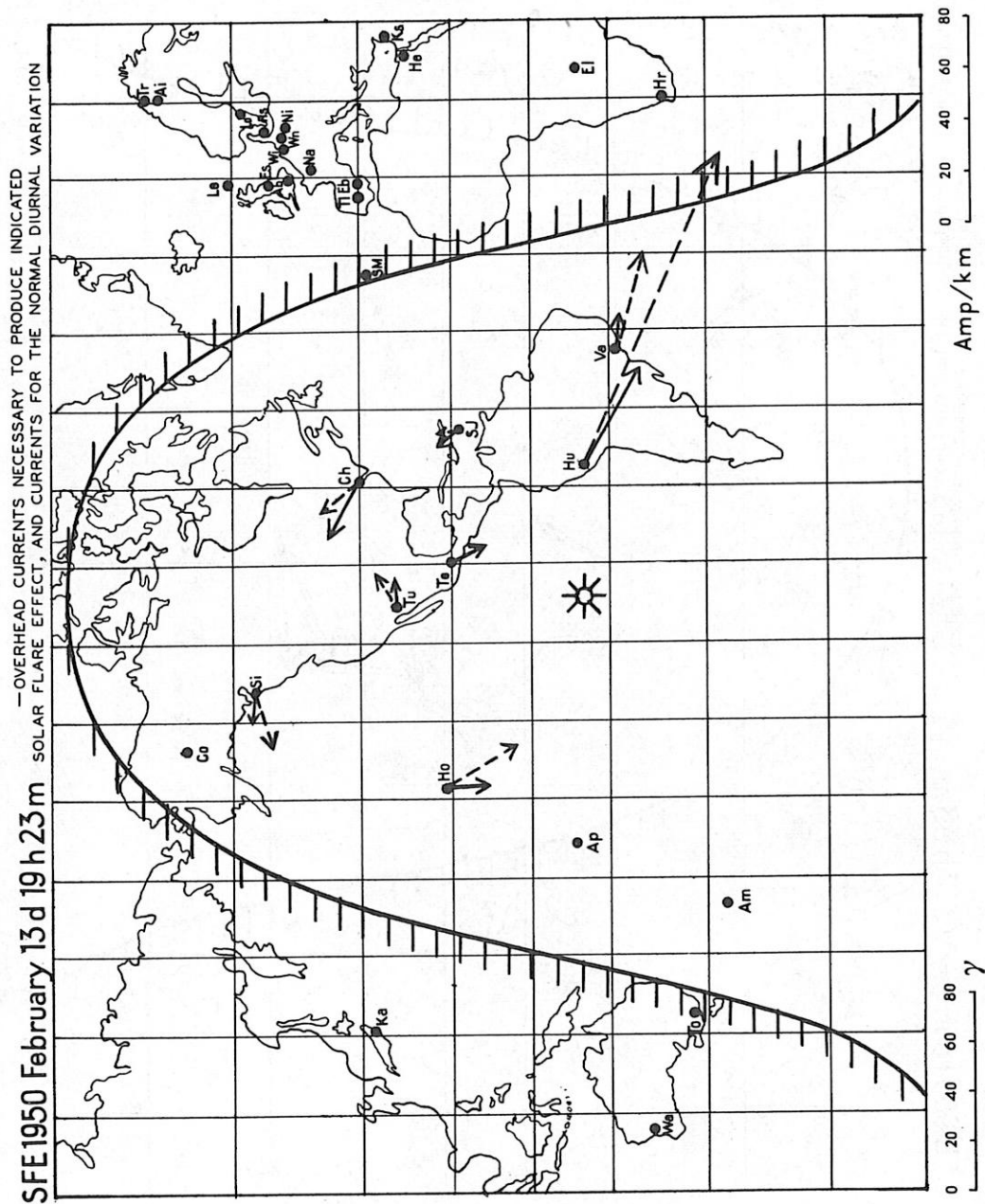
In order to avoid overcrowding of the vector drawings, mean values are taken for the observatories Le, Lo, RS, Es, Wn, Wi, Ni, Ab, and Na, and the mean vectors are drawn at a point indicated by the symbol E (Europe). The same is done for the observatories Tr and Ai. Here the mean values are drawn at the point NE (northern Europe). The mean values for Eb and Tl are indicated at a point SE (southern Europe).

The amplitude of the s.f.e. was measured from the estimated traces of D and H on the magnetogram, assuming that no solar-flare had occurred. Only D- and H-deviations were taken in consideration, deviations from the horizontal plane being very small in general.

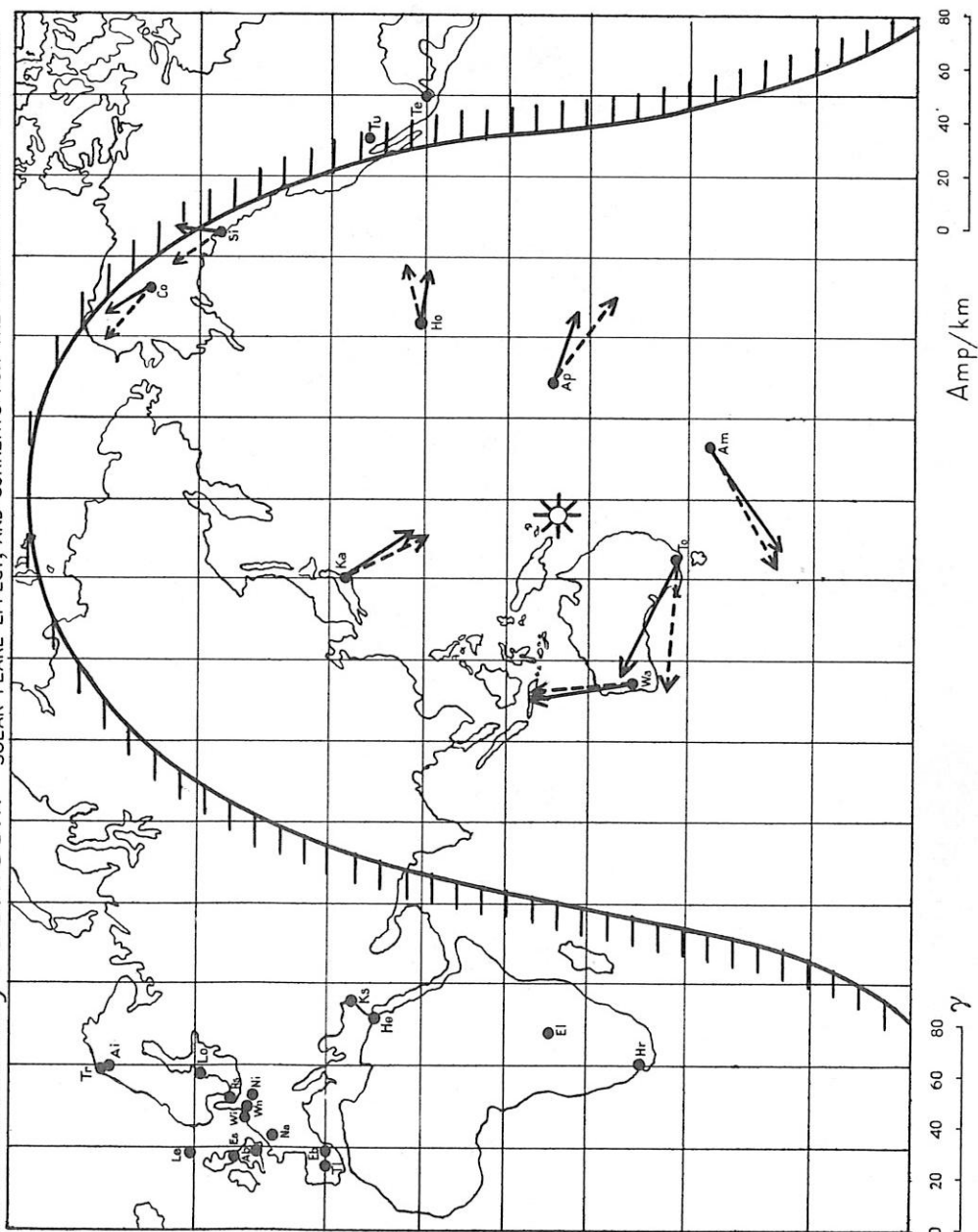
For the normal daily variation (dashed arrows) the daily variation on the day of the s.f.e. was used, taking the night-value (the mean value of the curve between 22h and 02h local time) as base-line.

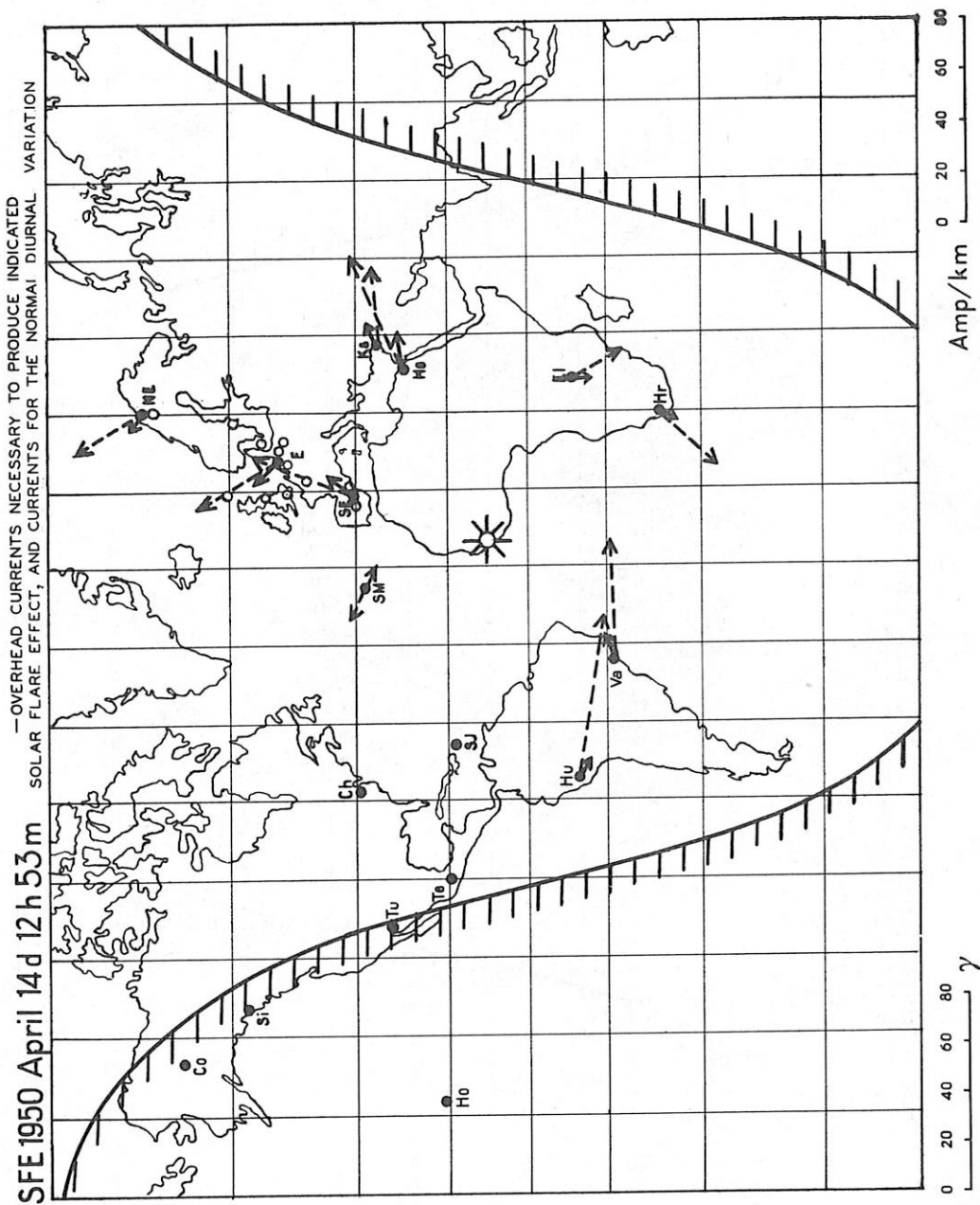
The heavy line indicates the limitation of the hemisphere hit by direct sun-rays. The subsolar point is marked by a star.

Scales of gammas and of current-intensity per km are drawn below the maps (see Chapman and Bartels, Geomagnetism, Vol.1, p.232).



SFE1950 February 17d 01h 38m

—OVERHEAD CURRENTS NECESSARY TO PRODUCE INDICATED
SOLAR FLARE EFFECT, AND CURRENTS FOR THE NORMAL DIURNAL VARIATION



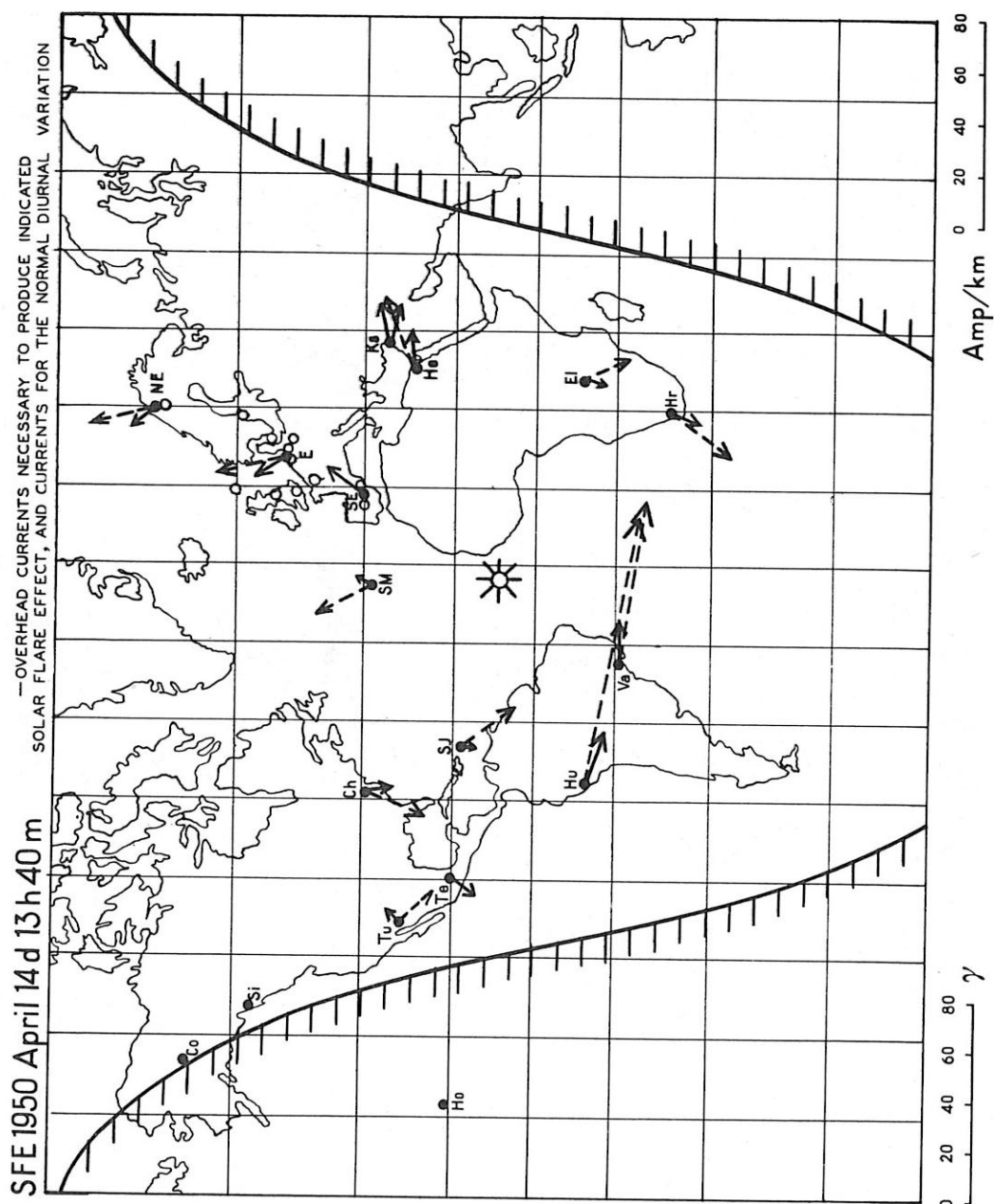


Table 16. Supplementary K indices Wingst 1940-42

1940	Jan.	Febr.	March	April	May	June
1	3202 2224	4433 4655	1222 2220	6545 3554	2111 2343	1101 2122
2	4312 3115	3233 3443	2111 1122	2211 2366	2201 1201	2312 3322
3	2422 5755	3212 4545	2221 1223	7753 4563	2221 2111	1111 4322
4	3113 5654	1011 1544	0000 1013	4222 2344	2111 1112	3100 1211
5	2521 0013	3112 3334	1121 0001	2211 1332	2111 2222	1131 2224
6	3323 3563	4112 3254	0000 0111	4211 1132	0000 1100	4443 4434
7	4222 4346	5322 4232	1201 1112	1001 1121	1221 2221	5433 4334
8	3331 1234	3222 2243	3211 1144	0011 0210	2201 2211	4332 3444
9	2011 3462	3422 1103	4521 1322	2000 0100	3302 3322	2322 2343
10	2212 5664	3211 0233	2101 1122	1000 0001	1222 4444	3121 1112
11	2323 2365	1112 2243	1001 1111	0101 2311	3322 3342	2111 1212
12	3333 4445	3422 3422	0001 1445	1111 1101	3333 3334	1001 2232
13	2322 1120	3111 3143	3212 1303	3123 3412	3212 3333	1100 1223
14	0011 0122	2112 2112	1212 1232	1322 2322	3322 3333	1333 5656
15	4211 2112	3112 3122	1001 1000	2212 4343	1312 3443	5543 4431
16	2222 3443	2122 2333	0011 2133	3323 2244	3100 0021	4222 3233
17	4322 5354	1102 2211	1011 0000	3321 1121	2213 3343	3322 4433
18	2224 5773	0100 0110	0000 0010	1111 1102	4554 5432	2443 3131
19	2112 1221	1001 0112	2212 2443	2111 2321	4122 2323	2323 3321
20	1111 2241	4432 2343	4433 4344	0232 3332	2212 4420	1100 2110
21	0011 1210	4322 3422	3322 1333	3322 2233	1410 0123	1311 1111
22	0112 1441	4232 2333	3211 1154	3332 2521	5434 4321	1103 4222
23	0012 2233	2222 2134	1145 4457	3101 3023	2302 2553	3111 2232
24	3322 2353	4212 3234	6444 6998	4001 3311	3647 6454	3333 3244
25	3321 3313	4343 4453	9878 5468	4732 2567	4211 1432	4747 9775
26	0001 0022	2111 2343	7543 2372	6432 3344	3422 3545	5322 2643
27	1121 1212	2321 2111	5434 3435	4311 2332	5323 2334	2323 3311
28	2100 0012	1212 2124	4333 2343	2112 2312	2433 4333	2101 2431
29	1100 2443	2222 3532	2124 4879	4322 2221	3211 2321	0200 2242
30	3322 2443		9877 6776	1212 3343	0000 1222	5402 2331
31	3223 4555		6337 7756		1000 1101	
1940	July	August	Sept.	Oct.	Nov.	Dec.
1	4211 2230	5212 2223	3323 4320	5422 4462	2233 2130	2322 2244
2	1101 1221	1112 2352	0023 2333	1012 2433	1212 0001	4324 3555
3	2212 3344	2333 6642	4333 3434	1322 3453	3212 2123	4213 3434
4	4333 3335	4222 1132	4312 2234	4300 0301	3322 4554	2311 3441
5	3211 3344	2213 4334	3212 2331	2312 3100	4323 3241	3211 1232
6	3322 3342	3223 3354	2102 2213	1112 2415	2211 0232	2201 0121
7	1112 3331	2223 4441	4423 3425	4443 5476	2222 2012	1000 0000
8	2011 1213	3223 3212	3224 3312	5542 2355	2000 0001	0000 0010
9	2422 4343	3235 4463	3322 2344	4012 1122	1211 3322	0222 3213
10	4444 4334	3112 3421	2010 0001	0002 1043	0000 0000	2312 1422
11	3321 2222	3322 3343	0001 2211	2211 1114	0000 0003	2111 0224
12	2212 1121	2322 2312	2111 1121	4213 1224	3023 3445	3122 2432
13	1225 7644	3211 2322	0000 1220	1111 2000	5662 3322	4222 1232
14	3534 3323	2322 2212	2211 2353	0001 1011	3322 3325	3112 3554
15	3322 4332	1110 1011	2321 3341	2233 2332	2323 1234	2101 3444
16	3211 3323	0010 0120	1212 4431	2011 1451	4201 1554	3213 2221
17	2211 1311	1000 1112	0010 1112	2100 2114	1101 1465	1100 2124
18	0101 1002	1001 2434	0011 0122	2222 2233	3121 1012	4212 2210
19	2111 2223	2021 2333	1001 1000	3323 4243	1011 2122	2100 1013
20	1110 1222	3323 2231	0122 3422	3322 1124	1011 1224	3233 5765
21	2112 2332	2201 2223	2233 3211	3123 2444	5323 3125	3524 4463
22	2232 4332	3122 2442	0012 3221	2233 3021	4544 3166	3233 5522
23	3112 3222	2111 2232	1000 1010	0001 0000	3333 3141	3112 3365
24	2323 3323	1000 0000	1100 0112	0001 1000	1010 1124	2211 2244
25	3323 1321	0000 0223	3433 3444	1002 2345	2124 5555	2232 2433
26	3211 1201	2212 3345	1001 0675	2134 4554	5432 3420	1323 2152
27	1001 1211	4322 2323	6412 3565	4213 4443	2111 3433	2201 4312
28	2112 2201	2322 3232	4443 3563	3212 2251	0111 1224	3102 2155
29	2222 2244	3112 4110	2112 3142	1411 2010	2424 5545	4312 1454
30	3323 4443	1001 1222	1010 1253	3200 1012	3222 3343	1453 3453
31	3323 3433	2101 2224		3111 1221		4332 4442

Table 16 Supplementary K indices Wingst 1940-42 (continued)

1941	Jan.	Febr.	March	April	May	June
1	1211 3454	0001 2221	3576 9996	3202 1213	0002 3333	3331 3223
2	3212 3303	0111 2143	5344 3554	3211 3224	1200 2212	2000 0100
3	1011 2034	3443 3244	3323 3551	3411 2344	2211 1132	1012 2120
4	4211 1110	3212 2222	4434 4536	2122 0113	1334 2323	2110 0111
5	0001 0312	2222 3254	4332 5556	2011 1214	2011 3210	1002 1222
6	3333 2231	4333 3343	3323 2450	3310 1113	1223 3240	1204 3221
7	2122 2642	5533 4545	3212 1355	0102 3355	1300 1122	1111 2201
8	3212 2124	4322 3454	4303 3245	3112 2232	0002 3332	0023 2310
9	2323 4332	3322 2253	4221 1354	3433 3422	2232 1123	0014 3322
10	4222 3333	4222 2223	3311 1132	2232 2555	4223 3322	2233 6634
11	3212 3243	2111 1242	3101 2145	3333 3333	3111 1000	5333 2452
12	2210 2223	1112 1122	1103 3334	3433 4312	1211 2122	2312 3332
13	3101 0134	4123 4446	3212 1334	4111 1112	4222 3311	1355 5444
14	1001 1013	5334 2533	5555 5466	1211 0100	1212 3313	5432 3234
15	2021 1100	5434 4442	1344 2344	0002 3223	3112 1222	3443 4342
16	1001 2412	4401 1234	3211 2120	3103 3211	4333 4412	2001 1012
17	5233 4756	3334 3353	0211 2122	1222 3322	1443 4223	1213 3453
18	4323 2565	2122 2131	3011 0214	4113 4236	1311 2333	4322 3430
19	4233 4535	0002 2421	2114 4445	4543 3444	2201 1021	0112 3333
20	3222 2135	1112 2245	5333 4645	3232 3334	1101 1202	3443 3334
21	2300 0033	3313 5655	4333 4465	3221 3231	2223 2455	4332 3332
22	1211 0244	4434 5765	4533 4664	0110 1222	4423 4354	3132 3233
23	4122 4555	4333 4565	2223 3545	0001 1121	3234 4345	2112 3222
24	3233 5554	2223 3654	2222 2335	0145 5665	3432 3343	1022 3333
25	3434 3544	3323 4354	2222 2232	5444 3544	4233 2334	2101 3133
26	5233 4335	3324 3231	2111 0011	3324 2212	3223 3233	4101 1233
27	2223 4544	0000 1221	0000 1011	1011 0222	1121 2332	3222 3122
28	3112 2343	3213 1223	5435 5655	2302 2444	3122 2224	3212 3322
29	2101 1203		4332 4566	5321 1001	2321 2222	3223 3221
30	3312 2343		5433 4668	2200 0100	3101 3332	1222 3112
31	2111 1010		7546 4444		4212 2342	
1941	July	August	Sept.	Oct.	Nov.	Dec.
1	3322 2113	1121 2243	3333 3443	2211 1132	6653 6640	3255 7756
2	3321 2121	5434 5433	3133 2333	1110 1134	1001 0243	5533 3431
3	3211 4423	2332 2424	3211 1122	2111 1112	3100 2203	1201 1354
4	1433 3355	5655 7766	2011 1112	2012 1113	3222 1012	4223 3254
5	6588 9958	6212 3343	0101 0101	2212 1211	1112 2455	1211 2344
6	3223 6654	2342 3435	0001 0221	1111 2222	3334 5765	3322 2313
7	6643 3553	4323 2324	0333 4455	2111 1211	4223 3543	2322 1232
8	1233 4341	2012 1221	3222 2244	3321 1333	3332 4452	2110 2324
9	1103 4444	1111 2112	3222 2125	1311 3222	3213 4533	1112 3214
10	4322 3445	1000 0002	3221 0231	0111 2243	3313 4534	2211 2202
11	2222 2110	3122 3232	2211 3223	4333 3576	5334 2543	0100 1010
12	2122 3112	2312 3213	2212 1100	6433 2423	2232 1234	0201 2331
13	1013 2211	2322 2323	0022 5645	3222 1242	1102 1322	2121 3443
14	0100 1113	2322 2221	4342 3435	2113 4313	2111 1223	5434 5455
15	1102 3222	3111 1110	5333 3465	3323 2343	1000 0112	3322 2215
16	2323 4422	0001 2121	6423 3244	2421 3455	1101 0223	4522 1112
17	4221 2332	2101 0011	2132 3432	1012 2212	3333 5666	2223 2435
18	3121 3231	1011 2233	2677 9999	1112 1121	2223 2444	2243 3423
19	3301 2223	4334 3333	9865 3573	3222 2522	5322 3223	2122 1222
20	1222 3333	2110 1112	5336 5321	1221 1123	2122 1132	2001 1211
21	3555 3352	3112 2332	2634 4410	3210 0002	3322 2133	0000 0013
22	3323 4423	2001 0132	1111 1111	2212 3666	3112 2455	2000 0222
23	3323 3323	0010 0012	0022 4533	2222 2354	3322 2314	2300 2424
24	2222 3332	1222 2232	4333 4354	3222 2454	3112 0133	3102 2243
25	2332 3221	1112 1343	5332 4363	3310 1121	1121 1142	0012 1110
26	0110 3112	5212 4444	2112 1112	1113 2135	1211 2010	0212 2214
27	0100 2113	6445 5456	3222 2422	3222 1013	0332 2213	4412 2224
28	1101 2011	4334 4233	2211 1234	1112 1342	5554 2475	4221 1223
29	1101 2112	3344 4544	2433 3323	3102 1133	2222 2112	4222 2324
30	2212 1112	5432 4343	3223 2243	2321 2223	2101 2233	2101 2334
31	2111 2223	3222 3333		3532 3477		3100 1332

Table 16 Supplementary K-indices Wingst 1940-42 (concluded)

1942	Jan.	Febr.	March	April	May	June
1	0111 1111	0101 2222	3298 7566	2322 3232	3333 3311	2111 2221
2	0222 3453	2233 4422	7432 5431	2233 4445	0222 3423	0001 1110
3	3322 3333	3221 1222	4445 5634	4522 3245	3212 1113	1123 4433
4	2422 5445	0011 2122	3333 2543	3355 4673	1112 3444	2011 1223
5	3434 2353	2323 4462	1432 3775	3302 3312	6321 2223	3221 2311
6	1223 2454	4434 4555	4433 3313	2201 1013	2211 2320	2213 2201
7	3323 3331	4213 2112	2234 3444	1001 1002	0112 1121	1111 2110
8	2000 1103	1101 1102	6523 2464	5433 4542	1101 1222	3211 3211
9	2210 0223	2111 1201	6532 3445	2123 3223	1012 1011	0121 1101
10	3212 3324	1111 3433	2213 2441	0100 1124	2111 1333	0101 0211
11	3122 3232	2110 2234	4411 0012	5543 5433	3211 1211	2224 5543
12	2222 2253	2201 1010	2111 1113	0112 2321	0001 2211	4123 3432
13	1001 3131	3311 2111	4424 5335	3123 4355	2100 0111	3223 3443
14	1111 0124	0012 2224	3344 3424	6344 4421	1442 3321	3233 4342
15	1121 3322	3232 3243	3113 4332	0112 1121	1312 3232	2321 0211
16	1111 2443	4212 3324	2111 1131	2333 3345	1112 2242	2111 2342
17	4334 2222	3312 0122	4222 1242	6444 3334	3211 1222	2333 4331
18	4323 2336	2110 0100	1023 3445	3333 5454	2112 2224	4223 2210
19	4532 1223	0000 2122	2223 3445	3323 3342	1111 1221	3223 4534
20	3111 1213	1202 2333	6421 1231	3112 3322	0111 2434	3322 3322
21	0001 1122	3311 4111	3333 3554	1010 2221	4212 3322	2321 2100
22	1211 3333	3211 2232	4333 2234	2100 0100	1342 2343	0101 2211
23	2211 1211	5211 4576	4212 3354	0234 5544	4222 2423	1112 3322
24	1011 1013	5344 3324	1323 3311	5232 2221	1212 2222	3221 3322
25	1002 2131	4212 3355	2112 3201	0000 0001	3101 3221	3222 1232
26	1111 1011	3111 1123	0134 5632	0111 1111	0111 2211	1211 2322
27	0011 1222	1201 1344	2412 1133	1012 3444	0214 4454	1211 2211
28	3322 2232	3313 6533	1111 1110	6312 2113	2432 3333	1222 4433
29	1100 0133		1322 4432	1110 0103	2212 2221	4222 3343
30	1111 2222		1222 3533	1022 4333	3111 2132	3433 3333
31	1111 1000		1232 3133		1111 1211	
1942	July	August	Sept.	Oct.	Nov.	Dec.
1	3333 3322	2111 2123	1113 3431	0010 0113	3233 3422	2001 2243
2	1211 2232	1111 2333	3343 2234	3334 5674	3222 2552	3100 0112
3	2111 3110	3222 2322	2212 1211	5543 4654	2112 3442	3000 0214
4	0111 1111	1211 1231	1123 2331	3443 4635	2234 1133	4221 4422
5	1121 2321	3110 3233	1312 3342	4433 5443	2021 1133	3111 0210
6	2111 3323	1113 4443	3233 4545	2212 0123	3211 0213	0001 1133
7	2011 3323	4243 2345	2223 2413	4221 4434	3222 3322	2112 2345
8	4345 5353	2111 0112	3222 2311	2201 2242	2223 4254	3120 2465
9	3322 3433	0112 2332	0212 2121	3110 1221	3101 1323	3213 4655
10	2222 2323	3332 4554	2310 3212	0123 2223	2022 4233	5333 2233
11	5444 5543	3323 3211	2113 4445	1111 2354	3232 3153	1322 4134
12	3225 4442	2323 2223	5454 3554	3335 4544	2321 3333	3123 3313
13	4322 2332	3101 0002	3333 2355	4333 4644	3112 4443	3001 1212
14	2332 3443	2211 1111	4333 3555	4233 5555	2223 2454	2112 2433
15	3333 4555	1012 2354	4324 4453	3442 3455	5211 2233	3210 1232
16	4233 4344	4433 3464	4433 3335	5323 4453	4211 0032	2221 1424
17	4323 2322	4233 4544	4235 4644	3332 2343	1302 2223	0001 1112
18	2212 1211	2334 5343	4223 4565	1223 2654	3122 3342	2201 0100
19	2111 3312	4334 4455	4334 4544	5334 4642	1122 1232	1011 0002
20	2134 4344	4324 3243	3324 5344	4323 5530	2323 2353	4201 0444
21	5332 2334	2223 4323	4445 5554	0011 3412	3232 2243	4434 4544
22	2113 3222	4332 1325	3333 4434	2211 2121	2011 1332	4424 3130
23	3221 2442	5434 5665	3222 1123	1111 2211	2112 2535	1334 4554
24	2321 2343	3322 3454	4121 2223	1100 1112	6645 4462	3123 4444
25	3433 4455	3432 3333	2111 1222	1233 3222	4434 4555	4222 3334
26	2111 3224	2333 3343	2101 1423	3321 1044	5523 5564	3432 3555
27	4334 4443	4233 3320	1111 2224	3111 1223	3124 3244	2211 2113
28	3423 4343	1111 1212	3121 3212	0003 4767	3223 5646	1201 2221
29	3232 2223	0011 1032	2112 2221	6465 4566	5223 3543	0101 1312
30	4323 3333	1001 2341	0122 2222	5443 4654	2221 3232	1000 0011
31	4222 2322	3212 4222		4334 5454		2000 0000

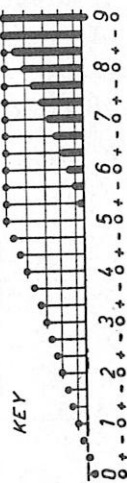
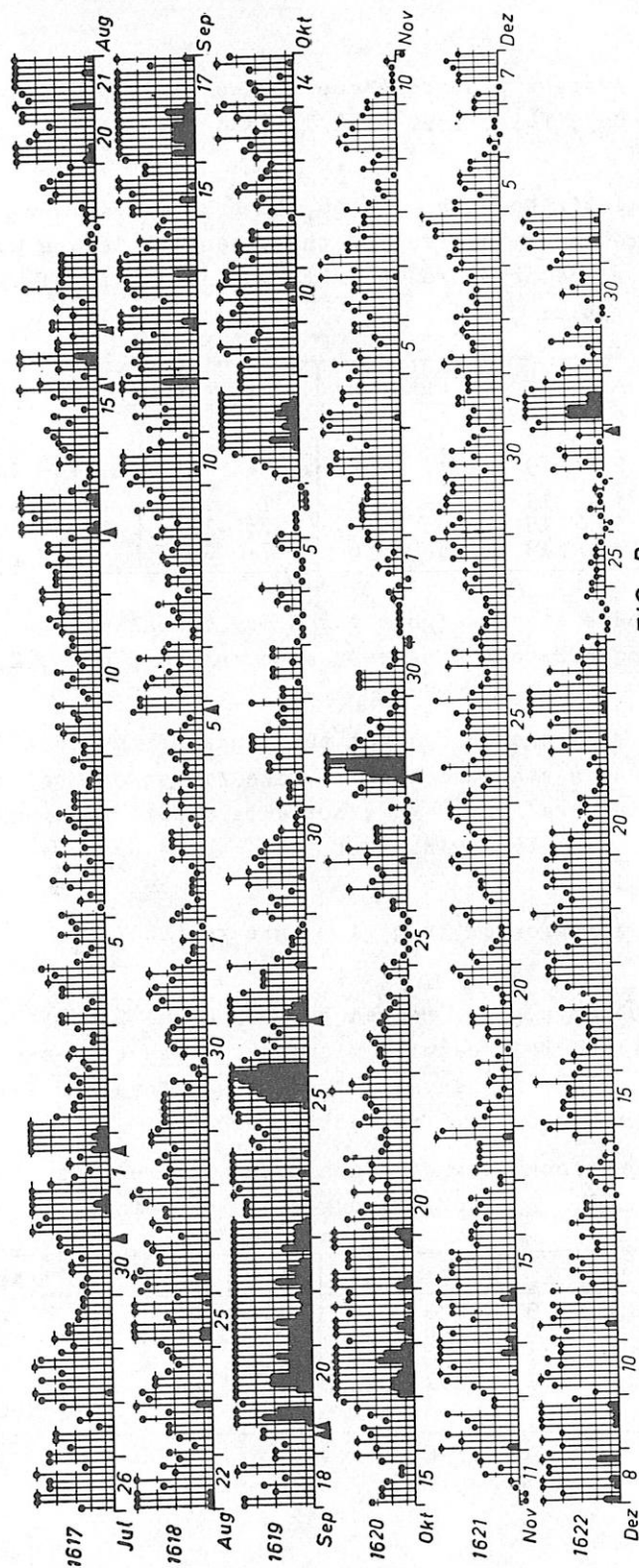
	January 1951								February 1951								March 1951										
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	303-2+2				3-303-3				21-	505-4030				2+1+4-40				280	4+4+3-3+				30+2+1+1+				23-
2	30404-3-				4-30403+				27+	3-2+100+				1-10102+				11+	000+1+20				3+2+1+2+				130
3	3+502+20				2+203-3+				230	2-101-0+				0+1+2+2-				9+	2-30403-				20+2-2-1-				180
4	3-2+1-0+				0+202-3-				13-	0+002040				30303-20				170	0030301+				201+1+30				150
5	20201+2				20204-4-				18+	1-303030				403+4+4-				250	0+203-2-				102-100+				11-
6	20201010				101-2+0+				10+	60604+40				202+1+2+				28-	1+3+503+				3+3-3-3-				24+
7	0+2-2-1+				1010101+				9+	3+3+2+1+				1+3-2+3-				19+	4-3+2+4+				604+5050				340
8	201-303-				302+2-1-				160	3-202+30				3-5-5+40				27-	4-304-6-				5-5+505-				36
9	1+2+2+2				2-1001+				120	3+4-4-30				4+5-405-				31+	4+404040				3+4-4060				330
10	10101+00				10404+3+				160	40404+3-				302+4-50				290	506-503+				4+4-4040				350
11	50204-2+				2-2+4+0				25-	5-4-3030				3-404-5-				29+	404-4+3+				30505-30				31-
12	4+4-4-4-				30302+20				26-	5+5+403+				4-405+4+				35+	4+4+4050				5-4-4020				320
13	3+40402+				2-1+4-30				23+	404-3+40				40303+4-				290	303+3+5-				506-7-6+				380
14	3+303030				3+303-3+				25-	303-2+2+				2020430				210	505-5-3+				5-5-6+4-				370
15	4+4+302+				3+3-3+0+				27+	20101+1+				2-1-102+				11+	6040302+				2+202-1-				220
16	4-2-3-3+				404-3+5-				270	1-040+0+				0+101+10				5+	1-30304+				3+304-30				240
17	404-3020				1-1+1+1+				17+	1-000+0+				10103-2+				8+	202-2+5+				304-3-3-				26+
18	102-1010				2+2+103-				130	3+20203+				3-303+20				22-	303+3+5+				30303-40				28-
19	4-3-2+20				3+2+304-				230	102+2+40				3-2+2030				20-	3+304-20				1-2-2-1+				17+
20	4020101+				2+2+1-1-				14+	2+2+1+2+				1+1-101-				120	1-101040				403-101-				150
21	10001-30				405-4-50				220	202+2+20				3-3-3030				200	1-10202-				1+10204-				13+
22	5+506+40				50505+60				42-	4+4+505-				504+5-5+				38-	404-305-				5-6-606-				37+
23	5-3-4-40				3+4-4-30				290	6-5+6-6-				5+5-6-60				440	40403+4-				4040504+				32+
24	2-303-3-				3+2-2+2+				20-	5050504+				4+5+404-				37-	4-303-3+				4-3+4+40				280
25	2-2+2+20				3-2-2+2-				17-	403+2030				3-303-5-				25+	4-5-2-4+				3+3-1+30				25-
26	1-1+2-2+				2+4-4-4-				19+	2+3+303-				4-404-2+				250	3+3-3+3+				302+4-4-				220
27	3+5-403-				2+30303+				26+	706-5-3+				40405-5-				380	5+5-303-				2+2+2-20				25+
28	4-4-3-3+				3+3+4-4-				280	507-7050				4+4-3+40				390	2+1-0+00				101+101+				80
29	2030304-				2+3-3-4-				230										1-4+5+40				5-40404+				31+
30	302+3+3-				203+3040				24-										4-3-203-				3-1+102-				18-
31	4+6-7-5+				404+4+4+				390										1+2-302+				2-3+2+1+				170

	April 1951								May 1951								June 1951										
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum
1	2+1+1+2+				0+102-30				13+	4-5-5+6-				305-7-7+				410	2+3+303-				4-4+4030				26+
2	4-4-4-2+				40505050				32+	7+2+4+5+				605+6060				43-	204-4-30				4-4-4+4-				28-
3	5+504+5-				5-606-50				41-	5-2+4-3+				4-5-505+				33-	4+2+2+20				3+1-102-				18-
4	5-5+5+40				50603+50				39-	5+4-3+4+				4+40403-				32-	1+2-2+2-				3-3-2030				17+
5	6-6+5-50				5+404+4+				40-	103-2+20				101+203+				16-	302+2+10				203-2+3-				18+
6	405+5040				5+505+60				39+	3+3+401+				2+2+3020				22-	2+306-50				4+302+2-				27+
7	506-4-4-				404+4+40				350	202+2+2-				3-202-20				17-	3-4-302-				4-2-202+				21-
8	5-4+4+30				30304-4+				30+	101-0+10				2-1+2010				90	3+4+3020				3+4+3030				26+
9	3+40404-				403+4-3-				29-	2-203+3+				304-5-7+				290	4030203-				3+3+0+10				20-
10	50304-3+				402+3+30				270	3+505+50				7-5+402+				370	1-0+0+2+				3+2+201+				13-
11	3+3+3020				3-20104+				22-	303-4-4+				5-303+40				29-	203-203-				2+4-3+30				22-
12	40303-20				2+303-5+				250	403+3020				204+401+				240	403-3+30				3-20303-				23+
13	6-503050				60403+50				370	1+102-20				0+1-1020				10-	3-20303+				402-2-2+				21-
14	5-4-4-40				303-2+30				27-	304-3-3-				1-3-4-4+				23+	101+001+				10406-60				200
15	2+201+2+				303-2+2-				18-	5-3+3-2+				30303+3+				26-	404-403+				5-4+404-				32-
16	2+1+1-0+				1-1+104-				11+	4+4+303+				2+3-3-30				26-	40203030				3+303+3-				24+
17	4-3-3-2+				3-2-201-				18+	405-4+4+				40404-40				330	2+1+2-10				1-5-4+80				240
18	10104+70				8-605050				370	5-4+2+30				2-202+3-				230	7+7-6+40				304-2+4-				37-
19	503-3+3-				20202-40				23+	3-3-2+2-				3-1+2-2+				17+	3+60505+				305+3-2+				330
20	304-303-				3+5+6+6+				34-	20202-1+				201-2-1+				13-	3+1+102-				1+1-1-4-				14-
21	6-5+4+5+				5-402+4+				360	1010101-				101-1+1+				80	203-402+				3-301+20				200
22	5+5+5-5-				504+503+				38-	3-2-1-10				2+2+1+1+				13+	2+2-2-3-				302+2+2+				18+
23	4-503+2+				3-201-3-				22-	2+2+2040				403+605-				29-	302-201-				1-1+1+20				13-
24	2+405040				60505+4+				36-	4+202+3-				30403-3-				25-	2-1+1-3-				2+102+30				15+
25	6-6-5-4+				4-505-40				38-	2-203020				201+3+4-				190	30404+4+				6-5+5-40				35+
26	6-3-202-				1+3-2-00				18-	3+202030				4-6-6-70				32+	304-4-3-				2+2-3020				220
27	1-1+2+2-				303+3030				18+	5+5+3-3+				2-101-2-				22-	203-402-				2+4+3-30				25+
28	3+2-2-2+				1+2+202-				16+	303-202-				2-1+1-0+				12+	3-30303-				3020203+				22-
29	404-2+2+				3+3+2010				220	1-1+403-				4-2+2+3+				20-	3-2+1+1+				3+3-3+3-				20-
30	1-101+10				1+1-1-2-				8+	1+1-3050				4+202-2+				20+	3-30303-				2+20301+				200
31										2+3-2-3-				2-1-3-30				17+									

Table 17 Geomagnetic planetary three-hour-range indices Kp.

July 1951										August 1951										September 1951									
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum		
1	3+2-1+3-	3-3+5070							270	403-2-30	2+606-60							31+	3-2-1+1+	201+1-3-						14-			
2	7+8-7-60	405-405-							450	6-504-3-	3-2+302+							27+	2+2-101+	1+1+101+						11+			
3	404-3+4-	5-4+5-4+							33-	3-2-2030	3-1+1+2+							170	3-203-3-	3-101+30						180			
4	4050403-	2+3+304-							280	3+3+2-1+	3+3+404-							240	2030201+	2+2-2-2+						16+			
5	30303+3-	30202-20							21-	4+2+2-1+	2+3+2+3-							20+	3-1+203-	2-1+5-4+						21-			
6	2-20203-	3-302+3-							190	3+1-201+	3-4-2-30							18+	4+20404-	3-204+30						260			
7	2-2-2-2-	1+302+3+							17-	1+3+2-30	2-2+3-3+							19+	3-10103-	202+3+20						170			
8	3-2-102-	10203-4-							16+	2+2+2+1+	1+102-2+							15-	1+3-3-2-	3-302+20						18+			
9	40402020	3+40402+							250	2-2-2030	3+202+3+							20-	3+30203+	4+4-304-						26+			
10	302-3-20	2-2-3-2-							170	1+2-3-2+	3+2-203-							18-	5-4+5+50	504-301+						32+			
11	1-103-20	303-2+20							16+	2+2+303+	4-303040							25-	4-3-4+3-	404+5070						34-			
12	202-1+20	2021+1+2+							150	403+3+3+	4-304-4-							280	5-404+40	5-4+3+5+						35-			
13	3+2+2-20	10101+2-							14+	2+6-5+4+	505+6-2+							360	60504+3-	4+5-5-6+						380			
14	2-1+2020	2-101+2+							13+	1+101030	2+3-303+							18-	50505-4-	402+303-						30+			
15	201+201+	2+303+6-							210	4-2+3+1+	3-3+5040							26-	4+4+604+	5+504-4-						37-			
16	3+402-40	504+4-30							290	1+306-6+	3030203+							28-	5-6+6-6+	6+6+6-7-						480			
17	303-4-50	3+404+30							290	3+20301+	3-5-3-3-							22+	6-505050	50503+6-						40-			
18	3-3+404-	5-503+3+							300	3-3-3-1-	101-0+10							12-	5-5-304-	2+505-30						310			
19	2-20304-	2+3-3-1+							19+	101+3+30	4-3+3-20							20+	302+4-4-	5+8-705-						37+			
20	303-3-2+	302+1+2-							190	6-5+5+4+	403+5-5-							37+	50607+7+	6+6+706+						52-			
21	302+302+	2-201+1-							16+	6+4+5-50	506-505+							41+	6+6+6+70	606-6-60						49+			
22	2-4+6040	3+504-40							320	5+5+5+4-	50304-3-							340	6-70606+	6-507-60						48+			
23	5+3+404+	2+2-2+3-							260	3+2-3-3+	3+5-3+60							28+	60605+4+	4+4+5+50						40+			
24	2-2+302-	302-101+							16-	4+5-4040	3+3-303+							29+	506-5050	5+4-403+						370			
25	1-2-3+30	3-3+3+30							210	4-6-6-50	3+505+3-							36+	4-5-5-5+	7+8-808+						50-			
26	3-50504+	4+502+4+							330	5-4+605-	4-4-404+							35+	9-8-4+4+	3-3+2+3-						35+			
27	4+3+4040	1+3-204-							25+	2+4-403+	3+4+505-							31-	6-6+605+	4+3+3+3+						38-			
28	5-5+4-5-	4-505-4-							35+	303+304-	3+3-4040							270	6-2+2-1+	1+101-3-						17-			
29	30403+3+	3-3-2+2+							24-	4-3+3+3+	3+3+2-3-							25-	4-2+3-1+	405+403+						27-			
30	202+2030	302+3+4-							22-	101+1-20	3-30303-							16+	4-3+302+	2010101-						170			
31	4-505-4+	5+605+50							39+	2+2-4-3+	404-3-40							25+											

October 1951										November 1951										December 1951									
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum		
1	201+1+1+	1-3-3-20							140	1-001+20	1+10203-							110	3-3-2+3+	3+3-3-3-						22+			
2	4-4-4-3-	2-202-4-							23-	3-4-3030	303-3-3-							23+	3+404-2+	2+3-303-						240			
3	2-2-1-2+	2+102+2+							14+	4-5-5-4+	4+3-4-50							330	3-3-202+	203-2+3+						21-			
4	1-0+0+1-	0+1+202-							7+	5-5+5-3+	4040304-							33-	304-3+3+	4+4+5-50						32-			
5	300+1-0+	0+1-2-20							90	3+4+303+	2-203+3+							24+	3+3+2-3-	30302+20						22-			
6	2-1-1-1-	000000+							40	2+3+4-3-	3+3+5+3+							27+	1+1-100+	1-1-3020						10-			
7	1+203-3+	4+5+7-5+							310	505-4-4-	3-3+3-3-							28+	202-0430	303+4-30						200			
8	606-6+60	5+504040							42+	4-2+1+2-	2-1-3-20							160	60405+6-	5-5-6+5-						41+			
9	40404-5-	503+305+							330	2-4-404-	3+403-2+							25+	4050405+	5+5+6-3+						380			
10	504+405+	406-5-5-							38-	2+2-1-1-	1-1-1000							8-	204+505-	405-4040						33-			
11	4+3+4040	3+3+2+1-							25+	00001-10	3-2-303+							12+	4+4-6-4+	404+304+						34-			
12	20303-40	4-3-2+20							220	6-405-3+	4-5-2020							300	203-3+3-	3+2-2-3-						200			
13	304-3+50	302+406-							30+	3-3+5-5+	4+50605+							37-	203+3-2+	20+102-						16-			
14	5-3-303+	1+3+5+4+							280	6-4+5+3+	4+4+605+							39-	203-1+10	0+10304+						16-			
15	3+3-3-2+	1+1+3-40							20+	40504+4+	404+303+							32+	5-3+4-4-	3+3+5030						300			
16	30403+4-	2+3+405-							28+	3+302+30	3-3+2+1+							21+	3-4-3020	2-20203-						20-			
17	606+6+60	6-707-6-							50+	1+303-3-	3-3-6-5-							25+	2+4-2-2+	3+404+4+						260			
18	4+5+605+	4+5+4+4+							39+	302+203-	1+10202-							160	404+3+3-	30404-50						300			
19	605+504+	4+4+5+6-							40+	103-1+1-	1+202030							140	4-303+4+	404+3+4+						30+			
20	603+4+4-	3+204020							29-	302+1010	1+3+4-40							20-	40403040	202-2+20						230			
21	304+304+	2+202+20							23+	3-302-1+	1010303+							170	2+1+1010	102-1+40						14-			
22	4-3+3-30	3+50403+							28+	402-202+	2+3-4-40							23-	3+5+3-40	4-5+5+50						35-			
23	30202+2+	3-30202+							20-	4-30203-	304-4040							260	5+4-2+40	202+2010						23-			
24	202-1+2-	0+1-2-20							11+	3+30202-	3+4+3-20							22+	2-0+0+1-	0+1-2-1+						70			
25	1+1-0+1-	0+1-0+1-							50	30203+30	304-3-5-							25+	1+10101+	10101-2-						90			
26	1+1+2+40	3-202+5+							21+	3-202-2-	40204-20							20-	0+001-1+	1-1-100+						50			
27	30402+2+	2+0+0+1+							160	2+202-2-	1+2-2-3-							150	1-4-2-30	3+1-205-						20-			
28	0+4-3+5+	70809-50							41+	302+302+	4-3+4-5-							260	4+707060	605-403+						42+			
29	4-3+3-20	3-1+102-							18+	404-3+4+	40404-4-							31-	302-101+	4-3-201-						160			
30	103+3+3+	1+101000							14+	402-4-2+	4-3-2+2-							220	0+0+1-30	2+2-2-4-						14+			
31	001-1-1-	1-1-101+							6-										3+305-6-	4+5-5+5-			</						



▲ = sudden commencement

FIG. B

PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES K_p

DECEMBER 22, 1950 TO DECEMBER 31, 1951

Ap 1932

1933

Unit 27

91

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
1	10	11	6	22	5	14	3	7	9	82	21	6	2
2	26	8	10	10	6	11	10	6	7	20	7	6	3
3	23	4	9	7	4	5	4	7	13	14	6	6	3
4	14	5	6	8	6	2	4	5	12	16	4	5	2
5	14	7	6	9	4	1	4	2	6	13	3	5	36
6	5	29	4	5	5	16	2	3	10	20	3	4	21
7	4	6	4	4	2	8	7	2	15	10	4	3	6
8	4	19	5	4	14	5	4	4	11	5	12	8	6
9	7	13	9	3	14	4	7	3	11	2	10	18	3
10	2	4	12	3	9	1	4	6	9	4	5	9	3
11	4	4	6	4	4	1	1	10	4	4	4	10	2
12	11	3	6	8	3	3	3	6	2	2	4	7	3
13	12	4	4	8	10	3	1	9	3	8	36	4	22
14	6	6	2	16	34	5	8	8	5	13	15	4	11
15	4	4	32	10	23	19	10	4	18	14	9	3	8
16	3	3	18	35	20	8	2	3	20	8	4	4	5
17	3	4	16	15	18	6	0	4	30	10	4	9	13
18	4	12	6	10	11	4	3	32	22	19	4	11	18
19	3	17	7	7	11	12	28	31	26	8	8	4	14
20	2	13	24	7	4	13	24	37	20	4	17	7	14
21	10	8	25	4	3	2	34	24	22	5	6	4	19
22	11	10	10	3	3	16	33	27	20	5	4	5	4
23	9	26	22	4	2	15	30	30	18	4	2	19	15
24	3	36	12	2	3	15	32	31	10	4	3	29	15
25	5	43	8	8	8	15	19	14	7	5	10	6	10
26	4	18	4	4	9	18	22	8	10	2	6	6	9
27	31	14	13	4	11	25	12	16	6	7	10	13	5
28	59	6	4	8	11	21	5	15	8	7	16	4	3
29	34	9	3	13	5	12		12	4	11	11	4	3
30	25	10	14	5	8	12		8	18	17	6	4	4
31	10		7		12	7		10		22		4	2

Ap

1940

Unit 27

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	10	39	7	66	7	4	7	10	22	40	12	13
2	13	18	5	34	5	8	4	12	10	13	6	25
3	47	16	7	98	5	6	15	35	22	19	13	17
4	24	8	4	15	4	3	22	9	16	10	24	13
5	12	11	4	9	5	9	16	11	11	8	16	9
6	20	14	3	9	1	35	13	17	8	12	8	5
7	19	12	4	3	6	32	6	14	30	61	10	2
8	12	11	11	3	4	19	6	10	15	49	4	1
9	12	9	27	2	10	15	14	38	17	8	12	12
10	27	7	6	2	14	6	28	8	2	7	2	11
11	23	9	3	5	13	4	9	17	3	8	2	8
12	27	16	13	4	16	4	5	10	4	10	22	11
13	7	10	10	11	11	4	58	7	3	3	49	12
14	3	6	10	11	12	40	20	8	15	2	16	18
15	7	8	1	17	14	26	14	3	12	14	12	13
16	12	8	5	14	5	14	8	3	12	10	16	11
17	21	5	2	8	10	15	4	3	3	5	14	7
18	38	2	1	4	34	16	2	12	3	12	6	6
19	8	3	20	6	10	11	4	9	3	17	7	5
20	7	21	27	9	10	4	4	11	10	9	8	44
21	3	18	10	12	8	4	9	6	13	16	23	32
22	7	13	10	18	31	8	14	9	8	16	35	22
23	6	11	51	8	18	7	6	5	2	2	25	17
24	15	17	190	8	78	16	10	2	4	2	6	10
25	14	36	185	70	12	125	9	4	22	13	36	15
26	3	8	53	43	24	24	5	19	44	28	26	12
27	6	7	30	10	21	8	3	13	45	16	10	12
28	2	6	21	8	15	6	6	10	42	13	6	14
29	10	12	100	10	8	5	9	9	10	6	38	21
30	18		190	11	3	12	18	4	8	5	16	34
31	29		130		3		16	7		7		22

Ap	1941									Unit 2γ		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	16	5	205	7	7	9	8	8	16	5	79	83
2	7	7	35	11	6	2	8	37	14	6	4	28
3	6	23	26	14	6	3	8	12	5	4	6	9
4	8	10	40	6	13	3	26	110	4	4	6	16
5	4	16	37	6	6	4	220	24	3	6	15	10
6	20	24	18	9	8	6	42	23	3	5	42	9
7	12	30	16	13	5	4	54	16	20	4	16	7
8	9	19	15	10	7	4	14	5	8	10	20	7
9	15	16	14	18	11	8	13	3	10	6	13	7
10	10	11	9	27	10	31	21	2	6	6	22	5
11	11	6	15	23	5	22	7	8	8	42	21	2
12	7	5	11	19	6	10	9	6	4	24	10	4
13	7	27	14	7	9	39	4	7	24	10	6	9
14	4	26	79	4	6	18	4	6	24	11	5	25
15	6	28	23	6	7	22	5	3	26	15	3	9
16	9	14	7	12	16	4	11	3	20	15	5	13
17	42	20	6	7	25	18	8	3	10	5	34	10
18	32	8	7	17	9	14	6	5	230	5	20	13
19	23	7	24	40	5	8	6	17	175	11	19	5
20	13	12	33	13	4	22	9	4	36	6	8	4
21	6	35	33	10	19	11	38	8	30	4	10	3
22	8	41	40	6	31	9	18	4	4	33	14	4
23	22	36	21	4	23	5	15	3	14	13	15	8
24	34	23	11	63	19	8	9	8	27	14	5	7
25	26	19	9	42	16	5	9	9	22	6	5	4
26	23	15	4	18	11	9	3	21	4	9	4	8
27	19	4	2	4	6	10	3	58	12	6	9	12
28	13	10	59	17	9	7	4	24	8	6	53	8
29	6		42	14	10	7	4	32	18	6	8	10
30	13		85	3	8	5	4	25	12	7	6	7
31	5		76		11		6	11		47		5

Ap	1942									Unit 2γ		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3	4	110	10	11	4	13	5	10	3	12	6
2	13	16	45	26	10	2	4	6	17	48	15	4
3	16	7	42	30	8	9	4	7	6	46	9	5
4	24	4	17	70	14	4	2	4	8	31	13	12
5	21	22	52	11	18	6	5	5	9	20	7	4
6	13	33	24	6	6	5	7	12	26	6	7	3
7	12	10	19	4	4	4	6	17	11	15	9	11
8	4	4	39	26	4	4	32	3	8	8	15	15
9	5	4	41	10	3	2	11	6	6	7	6	22
10	10	9	15	5	7	2	8	24	8	6	10	23
11	8	9	11	42	6	21	47	9	25	10	14	15
12	9	3	5	6	3	12	17	10	54	36	11	12
13	5	6	29	23	3	17	8	4	24	32	13	4
14	4	6	27	28	18	14	12	4	31	34	16	7
15	8	15	12	4	7	5	28	10	26	26	11	5
16	9	12	4	19	6	8	15	35	23	22	7	7
17	18	8	9	46	5	9	11	20	34	14	7	3
18	19	4	14	33	5	8	5	21	26	19	11	3
19	16	3	20	14	3	16	4	26	25	33	6	3
20	6	8	17	9	9	9	15	16	25	19	14	10
21	3	10	24	4	10	5	14	10	38	7	10	33
22	9	8	17	3	14	3	7	13	21	4	4	17
23	6	39	13	27	8	6	9	42	8	5	17	31
24	4	27	8	8	6	9	7	19	7	3	62	18
25	5	16	6	3	4	6	23	19	5	12	32	13
26	4	6	25	4	3	5	10	13	6	8	37	24
27	5	14	8	12	16	4	26	12	7	8	15	6
28	11	28	4	18	17	11	14	4	5	56	24	5
29	4		16	4	5	12	9	3	4	80	17	4
30	6		12	10	5	17	11	7	4	39	8	2
31	3		9		3		8	9		30		2

Ap	1943												Unit 2 γ		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1	4	6	6	13	61	8	3	20	36	45	28	8			
2	6	6	16	13	23	7	5	25	34	44	6	20			
3	8	10	10	36	11	4	14	28	48	43	4	26			
4	30	14	21	22	9	4	24	24	28	22	4	19			
5	18	12	16	27	9	6	47	20	23	8	13	17			
6	11	12	8	27	5	11	41	14	11	5	29	1			
7	3	5	6	19	6	12	16	18	8	16	15	4			
8	5	6	10	7	3	28	22	79	26	33	13	5			
9	10	6	8	4	3	22	33	48	38	46	10	9			
10	6	4	4	26	5	18	22	9	32	20	10	7			
11	4	9	15	39	7	13	20	6	24	12	3	4			
12	6	5	22	4	12	12	16	9	18	13	4	3			
13	4	12	4	3	17	22	17	52	28	7	3	5			
14	2	5	8	3	12	13	4	28	22	4	5	7			
15	2	4	3	8	26	4	7	20	14	2	4	7			
16	5	4	28	14	13	3	10	27	10	4	14	38			
17	25	41	11	8	24	2	10	28	11	13	3	35			
18	10	14	6	6	38	3	20	35	9	7	8	22			
19	7	9	11	5	19	13	14	34	12	9	57	40			
20	40	4	27	9	5	22	8	36	7	15	44	30			
21	28	3	8	24	4	21	15	18	23	8	39	24			
22	28	4	17	8	3	21	14	4	22	27	25	20			
23	9	8	29	2	9	21	7	10	12	11	44	13			
24	10	8	9	2	29	24	4	23	7	42	36	8			
25	5	11	4	14	21	14	3	19	13	39	44	12			
26	16	24	5	35	8	5	7	18	38	50	40	16			
27	7	10	5	7	14	8	9	5	36	33	44	6			
28	9	4	3	7	28	20	5	43	48	44	24	3			
29	5		38	12	11	6	4	36	61	40	27	8			
30	8		27	20	8	4	21	90	66	33	8	5			
31	5		18		5		13	140		37		15			

Ap	1944												Unit 2 γ		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1	19	4	5	12	35	5	5	7	12	22	3	8			
2	7	6	10	88	26	5	6	14	26	6	4	15			
3	3	3	4	21	9	3	6	42	8	18	6	10			
4	6	8	26	24	20	6	5	6	8	8	12	6			
5	14	5	9	24	17	7	5	6	7	5	28	6			
6	5	4	22	26	20	4	5	7	6	11	14	6			
7	5	40	31	23	15	3	7	5	6	7	6	2			
8	5	30	21	17	10	3	4	7	9	3	5	3			
9	6	20	29	9	4	5	10	5	6	4	7	6			
10	15	20	40	26	4	4	7	9	7	6	10	4			
11	32	20	15	12	5	6	4	11	8	33	4	3			
12	25	16	26	9	5	3	4	10	10	9	3	3			
13	30	14	17	1	3	4	5	6	6	10	1	15			
14	29	49	13	1	4	8	6	5	10	27	3	19			
15	25	24	6	11	5	17	9	5	4	36	3	8			
16	25	9	8	35	2	11	7	5	4	10	4	83			
17	22	5	2	9	4	6	8	5	4	11	2	66			
18	20	3	13	6	3	5	6	20	10	10	8	19			
19	13	3	33	4	4	5	8	7	3	4	8	8			
20	11	16	8	4	1	10	10	5	7	6	20	8			
21	6	10	7	4	3	16	8	4	18	5	3	11			
22	6	5	13	2	4	21	6	5	10	5	3	7			
23	6	4	8	1	6	13	4	10	13	14	4	5			
24	6	4	3	13	12	5	3	13	27	18	1	2			
25	5	3	9	8	6	4	3	3	10	7	1	3			
26	10	3	38	9	7	17	3	5	12	14	6	7			
27	13	3	60	12	8	11	3	7	13	8	3	36			
28	8	5	10	10	5	6	4	20	6	8	2	15			
29	6	7	25	10	25	10	4	4	7	4	3	11			
30	4		16	22	11	6	5	9	32	5	6	18			
31	6		9		9		6	16		13		8			

Ap	1945												Unit 27		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1	10	5	5	54	11	4	43	6	5	8	3	2			
2	10	10	5	16	13	3	11	18	7	6	3	4			
3	9	7	11	4	14	4	7	6	4	3	3	2			
4	9	5	5	7	6	3	15	4	19	2	6	1			
5	5	17	20	19	6	5	16	7	8	9	10	6			
6	7	12	15	22	6	22	27	8	6	4	2	11			
7	6	7	9	19	3	14	9	6	5	10	3	8			
8	4	15	21	16	5	18	14	5	5	10	10	15			
9	11	15	6	3	11	10	6	4	5	6	44	11			
10	25	8	5	4	10	13	3	3	4	1	12	6			
11	2	10	36	33	22	8	4	5	12	1	18	3			
12	5	7	50	29	13	5	5	5	14	30	17	3			
13	7	3	10	14	9	5	4	11	9	12	10	18			
14	4	5	11	23	9	4	4	16	3	10	6	70			
15	36	23	57	14	4	4	3	10	3	6	10	10			
16	15	21	23	5	7	4	9	7	7	14	14	4			
17	15	12	9	4	6	7	15	5	39	8	10	15			
18	6	8	10	4	10	5	8	3	43	8	3	5			
19	10	5	5	11	10	5	7	3	13	10	3	16			
20	10	4	23	15	8	6	3	2	9	9	3	25			
21	5	3	9	4	8	4	3	7	8	5	4	21			
22	4	7	3	8	4	2	4	10	5	8	4	2			
23	3	7	3	14	8	4	13	11	3	4	3	11			
24	1	7	8	16	9	4	7	3	3	52	2	15			
25	1	14	11	8	15	6	4	3	7	43	4	21			
26	8	23	53	3	6	4	4	3	6	4	2	24			
27	5	17	25	3	8	12	3	7	13	13	3	27			
28	13	8	53	3	6	5	12	30	6	36	3	24			
29	50		13	5	8	3	9	7	5	9	10	12			
30	15		4	12	15	12	17	3	16	6	3	6			
31	4		3		9		4	4		4		7			

Ap	1946												Unit 27		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1	10	4	28	19	8	6	4	7	4	21	28	6			
2	8	9	16	22	9	6	8	5	8	11	10	9			
3	70	10	5	7	7	2	17	5	8	13	5	11			
4	52	11	24	7	9	6	5	4	17	12	6	6			
5	10	13	25	9	8	9	3	5	12	16	14	12			
6	11	14	17	8	41	12	5	7	6	17	23	8			
7	6	125	10	13	37	47	37	23	18	14	9	12			
8	5	120	5	10	34	34	16	6	11	4	6	9			
9	4	15	13	36	49	20	18	5	12	31	11	6			
10	5	20	64	9	16	8	11	6	20	13	12	12			
11	23	8	32	5	41	12	14	28	11	9	18	14			
12	9	9	4	13	8	25	6	15	12	12	20	15			
13	4	15	5	22	9	17	4	8	8	6	7	9			
14	3	33	6	27	5	9	18	48	7	6	5	2			
15	4	18	9	61	5	7	10	23	6	6	17	3			
16	8	7	4	9	8	20	15	21	34	8	18	5			
17	11	8	24	6	14	28	13	22	29	4	7	9			
18	12	6	7	7	15	20	36	5	155	3	6	6			
19	10	27	6	5	4	35	26	7	58	8	19	27			
20	3	21	12	5	11	12	5	5	14	24	16	5			
21	3	51	12	4	31	16	10	4	22	6	25	12			
22	12	19	27	16	49	12	12	3	200	5	17	13			
23	16	21	23	115	38	5	19	3	145	8	9	9			
24	30	11	115	99	22	5	4	6	21	6	25	5			
25	12	13	195	11	15	10	18	6	5	9	20	11			
26	18	8	51	9	10	12	79	3	7	33	10	12			
27	6	2	30	7	5	19	150	6	38	56	2	13			
28	4	4	215	11	8	14	19	4	91	11	4	9			
29	13		35	10	8	46	60	3	36	11	2	7			
30	6		7	6	6	6	31	6	35	5	4	2			
31	7		13		15		8	52		17		5			

Ap	1947											Unit 27
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	7	9	6	9	14	26	11	18	10	38	10	11
2	10	3	81	9	3	5	16	14	9	61	8	8
3	14	8	130	13	5	9	7	9	84	45	6	4
4	21	14	82	23	5	6	3	10	35	9	10	9
5	24	4	10	10	9	32	4	6	18	6	4	14
6	22	11	6	20	8	13	8	12	22	9	2	30
7	10	9	19	10	5	18	8	7	45	17	4	12
8	7	27	90	16	3	22	12	7	18	13	16	9
9	2	23	46	33	3	17	10	6	6	50	62	23
10	2	14	6	11	4	11	12	7	4	60	48	13
11	2	6	6	15	7	8	11	11	17	44	53	16
12	2	5	18	13	12	7	9	28	17	47	22	20
13	3	5	16	10	18	23	10	26	48	28	14	19
14	3	4	25	12	24	62	6	12	59	45	11	13
15	5	4	36	17	29	14	8	55	62	47	14	12
16	36	44	20	14	36	6	5	54	21	23	15	6
17	14	39	24	100	15	40	68	58	55	17	7	4
18	9	12	14	50	17	13	70	60	43	16	9	7
19	9	24	10	25	10	14	28	52	26	29	18	8
20	5	11	13	30	7	8	30	44	21	22	8	5
21	6	3	8	8	8	8	12	41	22	14	9	2
22	7	3	21	3	9	14	15	71	33	11	6	7
23	6	2	33	4	24	16	22	55	44	17	8	13
24	22	8	29	2	52	11	12	21	90	12	13	6
25	61	11	13	10	12	23	18	28	100	7	9	5
26	28	13	26	15	21	20	20	13	15	4	5	10
27	16	6	27	14	14	6	20	13	12	3	7	14
28	10	7	75	12	19	10	7	10	11	3	6	10
29	11	17	17	11	22	5	10	14	10	4	12	12
30	7	35	12	5	11		5	8	11	5	7	4
31	6	21		15			6	14		9		3

Ap	1948											Unit 27
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	12	4	41	22	10	34	8	12	37	46	16	3
2	18	12	30	17	24	9	6	13	24	46	56	7
3	41	34	24	13	20	6	9	8	14	25	19	8
4	3	14	9	7	14	5	22	20	24	15	4	5
5	8	16	9	5	8	8	13	7	7	16	5	6
6	12	10	13	24	19	6	11	8	6	4	6	24
7	17	10	7	13	35	9	8	15	15	6	11	20
8	23	8	6	4	14	10	10	145	9	6	16	9
9	17	4	9	4	32	9	7	48	9	4	14	7
10	10	10	8	8	18	6	11	74	8	28	7	8
11	10	8	8	7	15	6	6	27	12	20	6	14
12	10	7	23	12	12	7	7	30	20	14	4	3
13	5	11	39	12	17	12	8	12	8	12	7	13
14	3	10	40	16	8	4	16	10	7	35	6	26
15	5	27	140	14	47	3	8	7	16	51	12	11
16	6	27	9	6	72	2	13	3	22	7	15	17
17	24	17	12	6	10	11	12	5	9	35	22	8
18	12	20	6	8	10	13	6	6	9	86	21	8
19	12	13	9	5	4	16	4	10	10	94	21	8
20	14	5	10	12	6	13	5	29	6	21	49	8
21	16	2	12	24	45	24	10	17	8	67	32	26
22	12	5	9	50	28	15	6	9	16	34	23	12
23	7	26	4	7	17	6	5	15	20	32	15	7
24	4	15	4	10	16	7	4	9	23	30	23	20
25	4	6	4	14	12	11	6	7	31	16	24	33
26	3	4	10	14	7	22	10	3	23	23	13	15
27	8	13	11	12	8	10	6	4	5	29	11	11
28	5	17	6	9	6	4	9	10	1	10	12	5
29	16	16	5	19	27	3	18	26	28	10	6	10
30	14	12		10	14	5	17	21	20	7	3	21
31	9	11			9		26	10		12		29

Ap	1949												Unit 27		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1	14	3	16	6	4	13	5	5	18	10	33	11			
2	45	5	24	6	10	10	4	20	21	9	34	4			
3	5	12	22	9	26	11	4	18	38	4	21	10			
4	4	32	9	6	31	58	3	64	13	18	9	15			
5	3	8	12	6	18	59	4	19	10	17	20	10			
6	8	22	4	4	16	27	4	9	9	21	10	11			
7	17	23	6	32	10	12	11	12	6	65	5	4			
8	10	4	8	83	11	6	10	34	12	38	2	5			
9	16	3	22	9	15	8	9	10	7	20	8	24			
10	17	6	4	32	11	4	4	11	4	9	14	5			
11	14	19	4	29	15	5	4	4	10	18	26	3			
12	17	16	9	26	150	34	10	4	28	8	16	2			
13	16	17	23	28	59	21	15	8	14	14	11	4			
14	7	11	38	18	18	6	6	32	17	91	12	14			
15	5	12	21	10	8	13	2	26	10	155	10	8			
16	9	9	36	14	15	8	18	7	11	62	13	9			
17	7	28	36	12	8	9	13	14	7	16	3	5			
18	20	21	37	7	4	14	12	13	4	8	9	4			
19	18	7	10	6	5	9	15	11	2	16	36	5			
20	8	8	12	5	4	6	7	10	2	11	42	10			
21	11	21	23	5	7	5	5	7	3	11	16	10			
22	13	46	90	5	8	10	12	7	6	16	5	8			
23	10	11	47	6	9	5	16	4	5	17	8	9			
24	38	25	8	8	7	7	8	3	14	19	6	14			
25	155	5	11	6	9	14	10	2	32	6	4	8			
26	100	8	16	8	6	9	5	4	20	6	4	6			
27	18	18	3	14	6	8	3	11	24	35	13	6			
28	8	7	16	7	6	10	3	7	11	32	5	9			
29	7		15	16	3	15	5	8	6	13	31	8			
30	3		10	5	36	8	6	8	17	7	38	12			
31	6		4		34		6	7		10		17			

Ap	1950												Unit 27		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1	8	7	10	40	6	17	12	15	5	58	50	6			
2	7	27	9	35	21	18	6	20	5	79	17	10			
3	6	21	7	31	43	16	15	21	56	52	10	8			
4	10	18	6	31	23	7	29	9	42	50	44	5			
5	6	9	6	53	22	8	16	6	64	37	13	8			
6	11	9	15	30	10	38	10	11	46	24	5	15			
7	10	14	22	18	11	5	10	42	20	34	2	11			
8	3	12	5	8	5	8	6	71	41	12	8	12			
9	11	12	7	9	2	26	13	38	17	11	6	9			
10	10	3	5	9	8	20	8	42	22	5	40	9			
11	9	5	3	7	14	7	32	29	21	6	17	4			
12	6	6	5	20	5	8	47	29	11	14	24	22			
13	9	4	4	11	16	4	25	13	13	11	24	39			
14	20	6	11	5	17	5	11	23	4	44	10	37			
15	11	8	21	19	23	4	10	12	3	25	4	12			
16	11	4	8	10	11	6	9	5	20	44	8	11			
17	5	4	6	11	6	14	7	3	21	26	14	7			
18	6	4	5	15	4	7	5	14	27	14	11	12			
19	12	6	84	24	4	4	4	135	28	4	5	12			
20	22	79	9	24	8	5	6	110	38	6	4	13			
21	19	79	27	4	8	8	9	19	9	4	5	6			
22	10	26	23	5	19	11	10	6	4	11	22	29			
23	6	49	6	17	33	23	3	8	27	16	8	35			
24	40	46	24	33	12	44	33	5	40	9	12	36			
25	24	17	12	9	10	18	40	5	36	6	49	32			
26	12	3	8	4	15	10	5	2	17	6	64	29			
27	15	5	39	5	48	5	9	6	11	4	45	20			
28	12	12	11	13	63	4	10	19	7	90	40	12			
29	6		14	17	22	36	10	22	3	62	23	8			
30	17		8	33	16	39	11	15	12	51	14	8			
31	5		20		6		13	8		51		4			

Ap			1951									Unit 2%		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	12	24	16	7	63	19	31	37	7	7	5	13		
2	20	6	7	31	68	20	82	24	5	15	14	16		
3	16	5	11	51	32	11	29	9	10	7	31	12		
4	7	11	8	46	28	9	22	16	8	4	30	28		
5	10	18	5	49	8	10	12	12	15	5	16	13		
6	5	31	18	48	14	25	10	11	19	2	21	5		
7	4	11	36	35	8	12	9	11	9	37	23	12		
8	9	22	38	25	4	19	9	7	10	60	9	55		
9	6	27	32	22	35	13	18	11	19	32	18	44		
10	12	24	36	21	47	7	9	9	33	42	4	31		
11	19	24	27	14	22	13	9	16	40	19	7	32		
12	18	37	29	19	17	14	7	20	34	14	28	11		
13	16	22	51	44	5	12	7	43	47	28	43	8		
14	18	12	42	20	16	22	6	10	28	24	47	10		
15	20	5	20	9	18	27	17	20	40	12	29	25		
16	20	3	17	7	18	16	24	30	82	22	13	11		
17	11	4	23	10	29	38	24	15	49	91	22	19		
18	6	13	22	66	16	54	25	6	28	47	8	25		
19	14	12	10	17	9	37	11	13	59	50	7	24		
20	8	6	10	41	6	8	10	42	105	26	13	16		
21	20	11	7	40	4	12	9	54	88	16	10	8		
22	54	41	44	42	7	9	32	36	85	22	15	37		
23	22	64	28	16	27	6	21	26	51	10	18	18		
24	11	39	21	41	17	8	8	24	42	5	14	4		
25	8	18	19	43	11	37	13	42	115	3	18	4		
26	12	17	17	14	42	14	33	37	73	16	12	3		
27	19	48	14	11	20	15	19	27	48	10	7	14		
28	20	55	4	8	6	13	36	19	14	98	19	68		
29	14		30	14	13	11	15	16	22	11	25	9		
30	15		10	4	16	11	13	9	10	9	14	8		
31	49		9		9		48	18		3		38		

Table 19 Average amplitudes Ap for months and years. Unit 2%.

	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De	Year
1932	..	..	..	..	..	..	..	12	12	10	8	9	10
1933	10	11	12	13	12	8	7	9	..	..	..	..	
1940	15	12	37	18	13	16	12	11	14	14	16	15	16
1941	14	18	33	15	11	11	19	16	27	11	16	11	17
1942	9	12	22	17	8	8	13	13	17	22	15	11	14
1943	11	9	13	14	14	12	15	31	26	24	20	14	17
1944	13	12	18	15	9	8	6	9	10	11	6	14	11
1945	10	10	17	13	9	7	9	7	10	11	8	13	10
1946	13	22	33	20	17	16	22	11	34	13	13	9	19
1947	12	12	31	18	14	16	16	26	32	23	14	11	19
1948	12	13	17	13	19	10	10	20	15	27	16	13	15
1949	20	15	19	14	18	14	8	13	13	25	15	9	15
1950	12	18	14	18	16	14	14	25	22	28	20	16	18
1951	16	22	21	27	20	17	20	22	40	24	18	20	22
Average for the years 1940 to 1951													
	13	15	24	17	14	12	14	17	22	19	15	13	16

Table 20 Frequencies of Kp Indices

November 1950 to December 1951

Kp	1950		1951											
	Nv	Do	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oo	Nv	Do
0 ^o	5	2	2	2	3	1	.	1	.	.	.	5	4	1
+	17	6	5	10	4	2	3	3	.	1	.	14	.	11
-	14	6	10	8	9	8	12	7	3	4	3	20	8	12
1 ^o	20	20	16	12	10	8	13	8	7	7	8	6	9	14
+	12	22	11	10	16	10	16	15	14	15	16	16	11	10
-	14	23	17	4	14	13	21	16	28	15	7	11	16	16
2 ^o	8	28	18	14	12	12	24	22	23	8	12	18	19	17
+	17	21	30	23	13	16	22	28	23	23	12	19	17	16
-	17	22	23	17	18	17	24	30	26	28	22	15	29	20
3 ^o	16	24	25	21	24	17	18	34	24	23	12	13	23	19
+	21	12	22	14	25	16	19	18	22	40	12	21	25	25
-	11	15	27	15	21	18	12	16	15	19	16	12	24	15
4 ^o	17	10	15	22	22	17	15	13	19	14	8	17	17	19
+	9	15	10	11	15	17	13	12	11	8	19	14	12	16
-	9	7	4	14	14	12	10	3	9	9	15	5	11	12
5 ^o	8	6	6	9	11	24	4	2	12	10	18	7	4	6
+	11	3	3	7	5	13	9	3	4	9	10	13	6	9
-	7	3	2	4	5	8	3	5	1	9	11	6	3	4
6 ^o	3	1	1	3	4	6	4	1	3	4	10	7	2	3
+	3	2	.	1	2	3	.	.	.	2	13	3	.	1
-	1		1	1	1	.	2	1	1		2	2		2
7 ^o				2		1	1	.	1		5	2		.
+						.	3	1	1		3	.		
-						1		.	1		3	.		
8 ^o								1			1	1		
+											1	.		
-											1	1		
9 ^o														
0	240	248	248	224	248	240	248	240	248	248	240	248	240	248

Table 21 Frequency of Kp-Indices, twelve years 1940-1951.

(a) Arranged according to months

	GMT	00..03..06..09..12..15..18..21..24	Sum
		E1 E2 E3 E4 E5 E6 E7 E8	
January (1940-1951)	Kp=0	46 46 35 32 32 25 20 26	262
	1	81 73 100 96 95 104 91 86	726
	2	79 98 101 119 102 93 101 99	792
	3	105 82 79 74 86 83 83 85	677
	4	44 52 41 38 36 43 52 53	359
	5	9 13 9 10 17 13 16 16	103
	6	6 4 4 2 4 7 6 6	39
	7	. 2 3 1 . 3 2 .	11
	8	1 2 . . . 1 1 1	6
	9	1	1
	Sum	372 372 372 372 372 372 372 372	2976
February (1940-1951)	Kp=0	40 41 23 13 17 25 26 31	216
	1	66 72 94 95 90 90 88 82	677
	2	75 78 87 82 80 88 77 81	648
	3	85 68 63 82 89 75 79 73	614
	4	43 55 46 44 41 33 44 46	352
	5	19 15 17 17 14 22 19 20	143
	6	8 6 6 3 7 5 4 4	43
	7	2 2 3 2 . . 1 .	10
	8	. 2 . 1 1 1 . 2	7
	9	1 1 .	2
	Sum	339 339 339 339 339 339 339 339	2712
March (1940-1951)	Kp=0	33 25 23 13 21 23 24 31	193
	1	63 59 66 78 74 80 79 75	574
	2	86 74 90 77 94 76 77 77	651
	3	76 86 84 84 83 79 76 73	641
	4	51 61 49 58 48 57 59 58	441
	5	35 41 36 36 30 32 28 31	269
	6	13 15 12 9 9 10 13 14	95
	7	10 6 6 10 7 7 9 6	61
	8	3 5 6 6 4 4 5 7	40
	9	2 . . 1 2 4 2 .	11
	Sum	372 372 372 372 372 372 372 372	2976
April (1940-1951)	Kp=0	33 25 27 20 22 22 31 30	210
	1	69 72 87 85 75 79 103 80	650
	2	70 84 78 99 99 98 65 81	674
	3	82 76 73 71 90 83 87 87	649
	4	58 57 52 51 41 44 39 52	394
	5	31 26 29 24 19 21 22 20	192
	6	11 16 11 3 11 10 7 6	75
	7	4 2 2 6 2 2 4 2	24
	8	2 2 1 1 1 1 1 1	10
	9	 1 1	2
	Sum	360 360 360 360 360 360 360 360	2880

Table 21 Frequency of Kp-Indices, twelve years 1940-1951

(b) Arranged according to the values of Kp.

00..03..06..09..12..15..18..21..24 GMT											00.03.06.09.12.15.18.21.24										
E1	E2	E3	E4	E5	E6	E7	E8	Sum			E1	E2	E3	E4	E5	E6	E7	E8	Sum		
Kp = 0											Kp = 3										
Ja	46	46	35	32	32	25	20	26	262		Ja	105	82	79	74	86	83	83	85	677	
Fe	40	41	23	13	17	25	26	31	216		Fe	85	68	63	82	89	75	79	73	614	
Mr	33	25	23	13	21	23	24	31	193		Mr	76	86	84	84	83	79	76	73	641	
Ap	33	25	27	20	22	22	31	30	210		Ap	82	76	73	71	90	83	87	87	649	
My	35	18	27	24	23	16	21	20	184		My	91	78	83	66	76	81	89	84	648	
Je	37	26	21	19	11	21	35	29	199		Je	74	76	79	74	72	69	71	84	599	
Jl	22	16	22	31	14	21	29	21	176		Jl	99	77	80	61	79	82	79	83	640	
Au	27	33	26	26	22	27	27	21	209		Au	73	73	77	80	76	81	80	79	619	
Se	31	26	23	13	15	17	18	19	162		Se	70	61	65	77	63	70	69	78	553	
Oo	24	36	30	21	33	28	20	21	213		Oo	80	89	90	69	69	70	66	70	603	
Nv	44	52	39	37	38	40	32	31	313		Nv	82	76	77	80	78	75	65	78	611	
Do	34	47	41	27	42	32	36	38	297		Do	83	87	77	77	78	89	62	83	636	
	406	391	337	276	290	297	319	318	2634			1000	929	927	895	939	937	906	957	7490	
Kp = 1											Kp = 4										
Ja	81	73	100	96	95	104	91	86	726		Ja	44	52	41	38	36	43	52	53	359	
Fe	66	72	94	95	90	90	88	82	677		Fe	43	55	46	44	41	33	44	46	352	
Mr	63	59	66	78	74	80	79	75	574		Mr	51	61	49	58	48	57	59	58	441	
Ap	69	72	87	85	75	79	103	80	650		Ap	58	57	52	51	41	44	39	52	394	
My	73	102	90	113	108	103	100	83	772		My	54	38	35	43	34	50	41	43	338	
Je	91	111	109	110	107	114	86	95	823		Je	38	39	36	35	30	37	42	38	295	
Jl	90	119	107	95	105	112	105	97	830		Jl	32	30	34	40	37	32	33	35	273	
Au	81	84	97	96	94	105	90	89	736		Au	47	44	43	40	42	45	48	51	360	
Se	58	66	71	74	77	93	72	76	587		Se	62	54	60	60	58	51	53	53	451	
Oo	69	69	74	91	82	91	84	75	635		Oo	70	53	53	56	46	46	57	54	435	
Nv	73	62	80	85	97	84	80	77	638		Nv	56	51	51	44	46	48	60	41	397	
Do	83	73	98	114	98	102	88	79	735		Do	47	51	36	44	45	40	50	51	364	
	897	962	1073	1132	1102	1157	1066	994	8383			602	585	536	553	504	526	578	575	4459	
Kp = 2											Kp = 5										
Ja	79	98	101	119	102	93	101	99	792		Ja	9	13	9	10	17	13	16	16	103	
Fe	75	78	87	82	80	88	77	81	648		Fe	19	15	17	17	14	22	19	20	143	
Mr	86	74	90	77	94	76	77	77	651		Mr	35	41	36	36	30	32	28	31	269	
Ap	70	84	78	99	99	98	65	81	674		Ap	31	26	29	24	19	21	22	20	192	
My	90	103	111	107	106	99	92	110	818		My	18	21	11	13	17	17	17	18	132	
Je	99	86	95	107	121	94	111	94	807		Je	11	14	16	12	14	15	5	11	98	
Jl	106	103	105	118	115	102	98	113	860		Jl	14	20	14	20	18	14	23	17	140	
Au	98	96	86	91	96	80	85	93	725		Au	23	26	26	25	27	18	27	22	194	
Se	70	87	85	84	94	71	90	71	652		Se	45	40	34	35	34	35	34	40	297	
Oo	82	66	75	85	86	68	82	92	636		Oo	21	32	30	31	37	47	38	36	272	
Nv	77	82	77	85	69	79	93	100	662		Nv	18	26	25	24	24	27	17	24	185	
Do	104	90	101	91	89	83	110	96	764		Do	18	18	12	10	13	18	20	21	130	
	1036	1047	1091	1145	1151	1031	1081	1107	8689			262	292	259	257	264	279	266	276	2155	

Table 22 List of magnetic storms,
1950, 1951, and January to May 1952.

Continuing the list in IATME Bulletin 12c, p. 134-136. Gives consecutive sequences of three hour intervals (Eights E of the Greenwich day) in which at least one Kp reached or surpassed 7+, and no Kp was smaller than 5-

Beginning	s.c. d GMT	Duration Eighths	Number of Eighths with Kp=			
			7- 7o 7+	8- 8o 8+	9- 9o	
1950 Feb. 20 E6	19 23.7	9	. . 1	1 . 1	1	
1950 Mar. 19 E3	19 o5.8	5	1 . 3			
1950 Aug. 7 E7	o7 10.9	6	. . .	3		
1950 Aug. 19 E3	18 15.6	10	. . .	3 3 2		
1950 Oct. 28 E2		17	1 1 1			
1951 Apr. 18 E4	18 o6.9	6	. 1 .	1		
1951 May 1 E6		4	1 . 2			
1951 May 9 E7	o9 17.8	2	. . 1			
1951 Jun. 17 E8	17 17.0	4	1 . 1	. 1		
1951 Jul. 1 E7	o1 22.5	6	1 1 1	1		
1951 Sep. 19 E5	19 o8.7	31	1 4 2	1		
1951 Sep. 25 E2		9	. . 1	2 1 1	1	
1951 Oct. 28 E4	28 11.9	5	. 1 .	. 1 .	1	
1952 Mar. 3 E5	o3 o7.5	24	2 . 2	. 1		
1952 Mar. 30 E6		7	2 . .	1		

Table 23 Very quiet intervals in 1950 and 1951.

Kp not exceeding 1+ for at least 8 intervals (= one day) in succession
Continuing the list in IATME Bulletin No. 12c, p. 137.

First ... last Eighth			Duration Eighths	First ... last Eighth			Duration Eighths
1950				1951			
Jan. 7d E8	8d E8		9	Jan. 9d E6	10d E5		8
Feb. 10d E2	11d E1		8	Feb. 16d E1	17d E6		14
Feb. 16d E5	18d E3		15	Mar. 28d E2	29d E3		8
Feb. 25d E6	27d E4		15	Apr. 29d E8	30d E7		8
Mar. 10d E5	11d E7		11	May 20d E8	21d E8		9
Apr. 21d E2	22d E3		10	Oct. 6d E2	7d E1		8
Apr. 26d E4	27d E6		11	Oct. 25d E1	26d E2		10
May 9d E1	10d E2		10	Oct. 30d E5	Nov.1d E3		15
May 18d E2	19d E5		12	Nov. 10d E3	11d E4		10
Jun. 13d E1	14d E1		9	Dec. 24d E8	25d E7		8
Jun. 14d E6	16d E4		15	Dec. 26d E1	27d E1		9
Jul. 22d E8	23d E8		9				
Aug. 25d E3	26d E8		14				
Sep. 14d E1	15d E8		16				
Sep. 29d E1	30d E3		11				
Oct. 27d E1	27d E8		8				
Nov. 6d E4	7d E8		13				
Nov. 19d E4	20d E5		10				
Nov. 20d E7	21d E6		8				

E R R A T A

Bulletin 12 p. 320 Kw 1944 Aug.16 E1 for 2.8 read 1.2; Sum 13.4
 p. 324 1945 Oct. 8 E6 " 1.1 " 3.0; " 17.4
 Nov. 4 E7 " 0.4 " 2.2 " 13.1

Bulletin 12b p. 113 Kp 1945 Apr.27 E3 for 3o read 0o; Sum 6o
 p. 114 Aug.13 E8 " 0+ " 3o; " 19-
 p. 116 1946 Jul.22 E8 " 3+ " 4-; " 21o

Bulletin 12c p. 102 Kp 1949 Feb.24 E4 for 4+ read 4o
 E5 " 4o " 4+
 Mar. 9 E2 " 4o " 4-; Sum 26+
 p. 103 Kp 1949 Jul.28 E4 " 1o " 1-; " 6-
 p. 108 1942 Jan. 1 E6 " 1- " 1o; " 6+
 p. 109 Jul.30 E1 " 3+ " 4-; " 20+
 Aug. 2 E4 " 1+ " 1o; " 13-
 Aug.17 E1 " 3+ " 4-; " 28-
 p. 135 and 136 headline " 9+ " 9o

Bulletin 12d p. 51 Table 5. Solar-flare effects
 1932 March for 19d 18h...read 19d 08h

Bulletin 12e p. 6 The scale value Z for Do should read 6.6 μ /mm.
 p. 7 Instruments RS are of normal and low sensitivity,
 and quick-run.
 p. 7 Si and Ch have normal and low sensitivity instru-
 ments.
 p. 8 Wn has reported K-figures beginning with 1940.
 p. 67 The ten quiet selected days for January 1950
 should read: 2, 3, 5, 8, 12, 17, 18, 23, 29, 31.

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